



Memorandum

November 21, 2017

To: Brian Kelly, U.S. EPA
Lori Kozel, Tetrattech

Ref. No.: 048041

M.J.

From: Glenn Turchan/kf/164

CC: Grant Gilezan – Dykema Gossett
Colleen Liddell, Bert Richnafsky – NPOS Respondents
Lisa Clements – GHD

Subject: Response to November 8, 2017 U.S. EPA Email Comments
July, August, and September 2017 Quarterly Progress Report
Quarterly Progress Report 18
Former Dearborn Refining Site, Dearborn, Michigan

This Response to Comments Memorandum presents responses to the United States Environmental Protection Agency (U.S. EPA) email comments dated November 8, 2017. The U.S. EPA comments are regarding the July, August, and September 2017 Quarterly Progress Report (Quarterly Progress Report 18).

U.S. EPA Comment 1:

Section E – says, “While methane was detected at some locations south of the southern PVB, it should be noted that off-Site subsurface impacted conditions beyond the southern PVB have been previously determined to have the ability to generate methane.” Add the reference you are citing.

Response to U.S. EPA Comment 1:

The Quarterly Progress Report 18 statement regarding the methane results present on the Ferrous Processing and Trading (FPT) property is referring to the Revised Methane Investigation Results Summary Memorandum prepared by GHD and submitted to the U.S. EPA on December 14, 2016. The Revised Methane Investigation Results Summary Memorandum is attached for your reference (see Attachment 1). The methane results detected on the FPT property are presented on Figure 1 of Attachment 1. The boring logs for all investigations presented on the FPT property are presented in Attachment 1 (see Attachment 1, 2, and 4 of the Revised Methane Investigation Results Summary Memorandum). Subsurface materials identified include stained foundry sand, wood, brick, glass, slag, concrete, etc. (backfill for the previous clay mine).



U.S. EPA Comment 2:

Is it accurate that there is 8.26 feet of LNAPL at EX-34?

Response to U.S. EPA Comment 2:

The reference to 8.26 feet of light non-aqueous phase liquid (LNAPL) at passive gas vent EX-34 is a formulation error. LNAPL was not present at EX-34. The remaining readings were evaluated to identify any further formulation errors. There are no additional errors. We apologize for this discrepancy. The figure (Figure 1) and table (Table 2) that identify the incorrect LNAPL reading were revised and are attached. Quarterly Progress Report 18 will be re-issued to include the revised Figure 1 and Table 2. It should be noted that GHD monitored the levels on November 16, 2017 as well for the 4th Quarterly Progress Report (due in January 2018).

U.S. EPA Comment 3:

Table 5 uses the VISL. DEQ has rescinded portions of the VI numbers. DEQ recommends either the August 2017, “Media-Specific Volatilization to Indoor Air Interim Action Screening Levels” or Tables 1 and 2 of the January 2017 “Volatilization to Indoor Air – Recommendations for Interim Action Screening Levels and Time-Sensitive Interim Action Screening Levels.”

<https://content.govdelivery.com/accounts/MIDEQ/bulletins/1a3e6d2>

Response to U.S. EPA Comment 3:

Table 6 [Soil Gas Analytical Results in microgram per cubic meter ($\mu\text{g}/\text{m}^3$)] was revised to include the Michigan Department of Environmental Quality (MDEQ) August 2017 Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSLs), rather than the Vapor Intrusion Screening Levels (VISL). Table 7 [Soil Gas Analytical Results in parts per billion by volume (ppbv)] was revised to remove the VISL. The MSSLs are presented in $\mu\text{g}/\text{m}^3$ only. Quarterly Progress Report 18 will be re-issued to include the revised Table 6 and Table 7.

Attachment 1



Memorandum

December 14, 2016

To: Brian Kelly, U.S. EPA
Lori Kozel, Tetra Tech

Ref. No.: 048041

MJ

From: Glenn Turchan/wg/155

CC: Grant Gilezan, Dykema Gossett
Colleen Liddell, Bert Richnafsky, NPOS Respondents
Lisa Clements, Doug Gatrell, GHD

**Subject: Revised Methane Investigation Results Summary
Dearborn Refining Site, Dearborn, Michigan**

1. Introduction

GHD Services, Inc. (GHD) has prepared this Memorandum to present the results of the methane monitoring activities completed on the Ferrous Processing and Trading (FPT) property located south of the property line at the Dearborn Refining Site, located at 3901 Wyoming Avenue in Dearborn, Michigan (Site). The methane monitoring was completed in two phases. Phase 1 was completed in November 2016. Phase 2 was completed in December 2016. The results of each phase are presented below.

2. Methane Investigation Results – Phase 1

Phase 1 included the implementation of the Methane Gas Investigation Work Plan (Work Plan) prepared by GHD, dated October 7, 2016, and approved by the United States Environmental Protection Agency (U.S. EPA) on October 12, 2016. The Work Plan identified "bar hole" advancement and methane monitoring activities on the FPT property at locations 1 through 45. Field activities were completed on November 16, 17, and 18, 2016. The results were presented in Preliminary Methane Investigation Results Memorandum and submitted to the U.S. EPA on November 23, 2016; and are summarized below. The Preliminary Methane Investigation Results Memorandum also included proposed additional monitoring activities.

The maximum methane reading for each location (occurring at various depths) is presented on Figure 1. The methane readings collected through the bar hole are presented in Table 1. Methane readings were collected at 3 feet (ft) below ground surface (bgs) then 2 ft intervals until water was encountered/there was no flow/or until native clay was reached (if geology was known at that location).



Previously, soil borings were advanced on the FPT property in December 2009 during a laser induced fluorescence (LIF) soil investigation. The soil boring and LIF locations are presented on Figure 2. The LIF results are presented on Figure 3. The soil boring logs are presented in Attachment 1. These borehole logs present stratigraphic information (e.g., clay mine backfill or native clay) over the methane investigation area.

In addition, sentry wells are located in the area of the methane investigation. The sentry well logs are presented in Attachment 2. The sentry wells logs present additional information regarding subsurface conditions.

GHD also reviewed conditions at the northern most buildings (potential receptor of methane vapor in the subsurface) on the FPT property from a safety perspective. The two buildings are in poor condition and do not have basements (e.g., concrete slab on grade over footers). FPT does not use the buildings currently. Methane readings were collected from the exterior/interior of the buildings on November 18 and 22, 2016 (e.g., ambient air, floor, adjacent to the walls, etc.). Methane was not detected in the exterior or interior of the buildings. Photographs of the buildings are presented in Attachment 3.

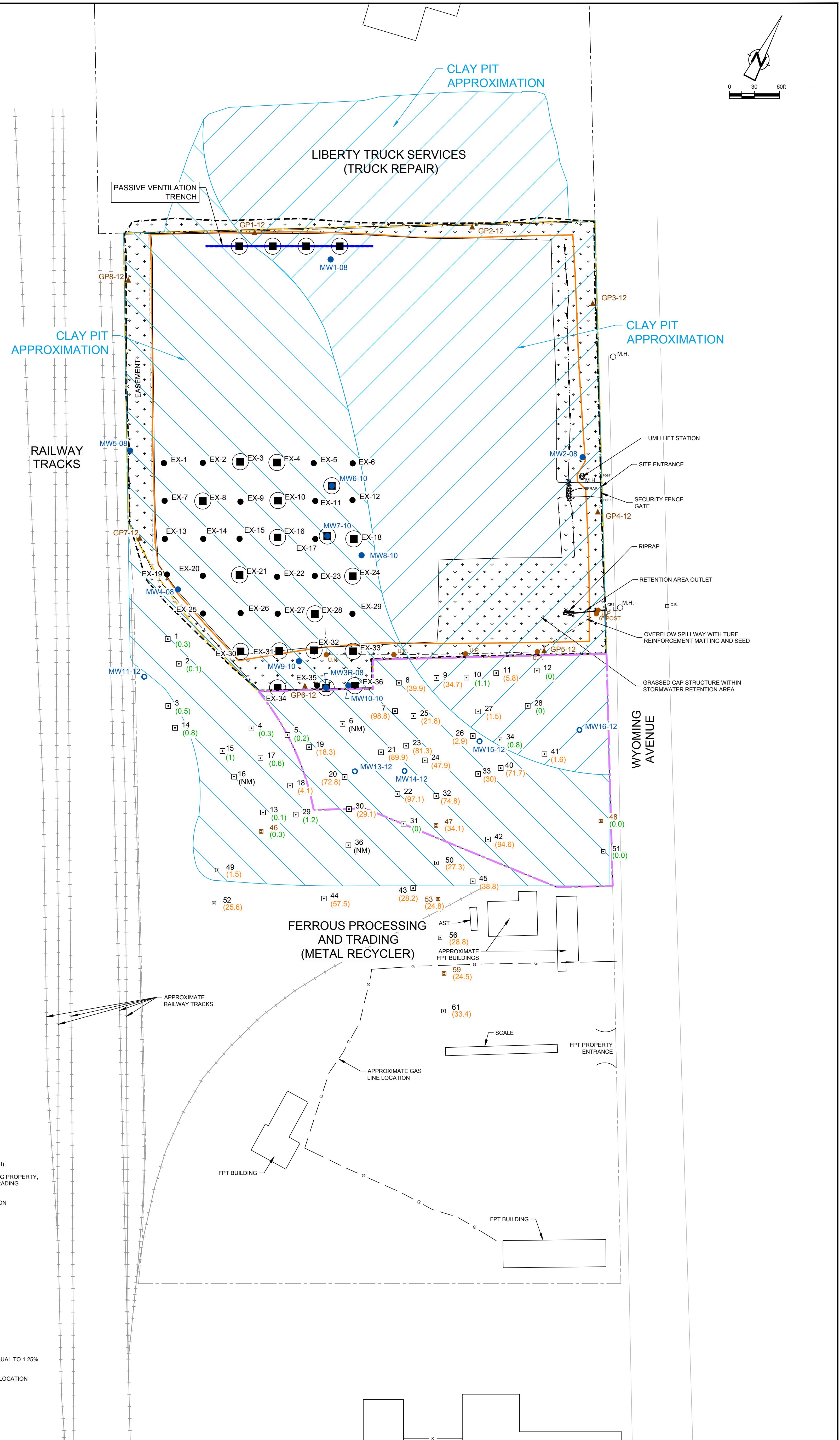
3. Methane Investigation Results – Phase 2

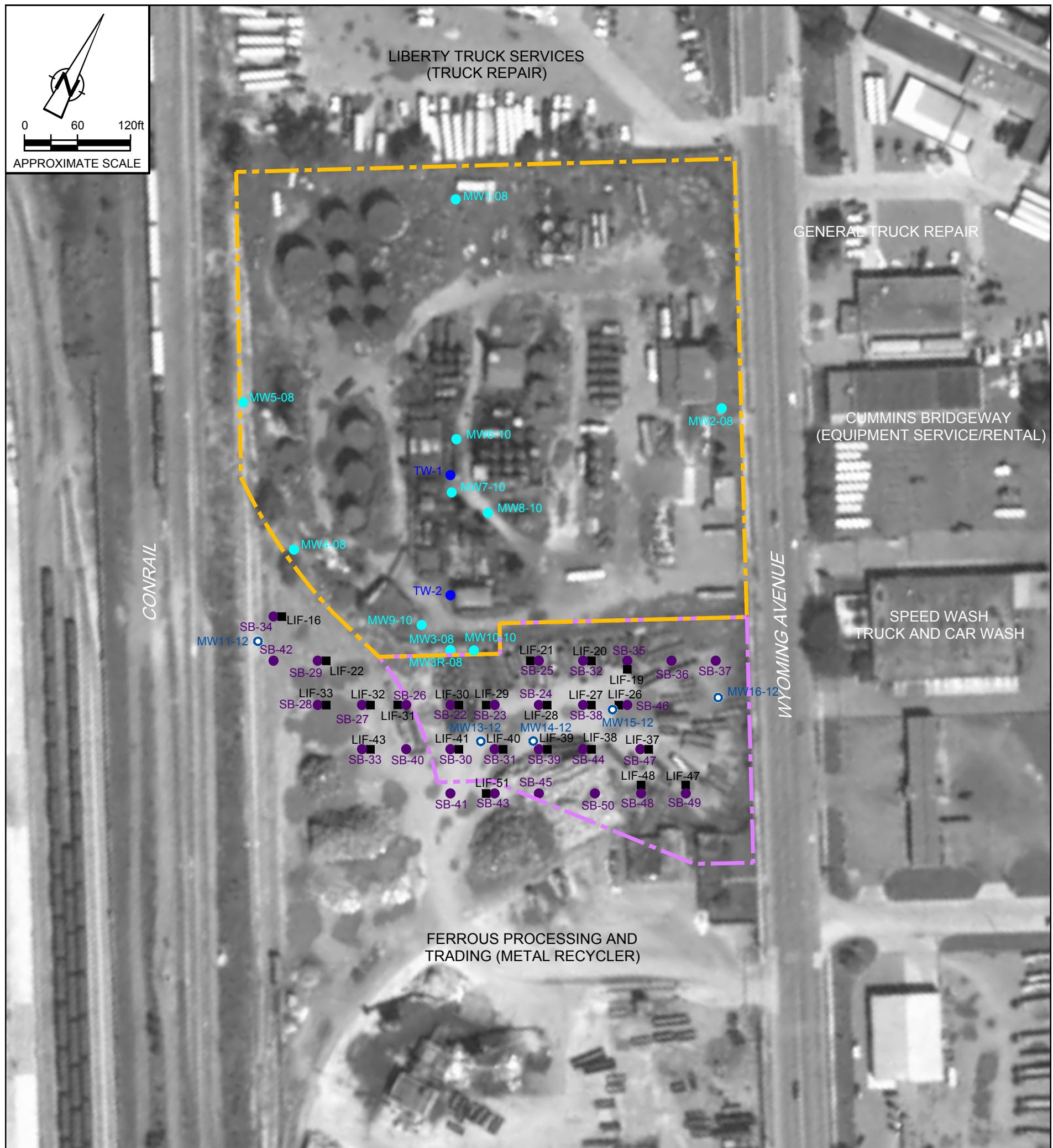
Proposed additional methane monitoring activities were identified in the November 23, 2016 Preliminary Methane Investigation Results Memorandum and completed as Phase 2 of the methane investigation.

The Phase 2 investigation field activities were completed on December 1 and 2, 2016. Phase 2 included the advancement of 11 bar holes (for methane monitoring) and 5 boreholes (for stratigraphy) on the FPT property. The 11 methane monitoring locations included bar holes 46 through 53, 56, 59, and 61. A borehole was also advanced at locations 46, 47, 48, 53, and 59.

The borehole locations were approximately located in the middle third of the FPT property extending up to approximately 400 ft south of the Dearborn Refining Site. Foundry sand, brick, glass, slag, and/or concrete were identified in each of the soil borings (backfill for the previous clay mines).

The maximum methane reading for each location is presented on Figure 1. The methane readings collected through the bar hole are presented in Table 1. Methane readings were collected at 3 ft bgs then 2 ft intervals until water was encountered/there was no flow/or until native clay was reached (if geology was known at that location). The soil boring logs are presented in Attachment 4.





SOURCE: (1). 2005 AERIAL IMAGE FOR WAYNE COUNTY, MICHIGAN UTM ZONE 17 NAD83.
IMAGE PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AS PART OF THE NORTH AMERICAN IMAGE PROGRAM (NAIP).

(2). FIGURE 2. BASELINE ENVIRONMENTAL ASSESSMENT REPORT PREPARED BY BILLINGS INDUSTRIAL GROUP, INC. AND DATED JULY 19, 2000.

LEGEND

- — APPROXIMATE CURRENT DEARBORN REFINING PROPERTY BOUNDARY
- — APPROXIMATE FORMER DEARBORN REFINING PROPERTY, CURRENTLY FERROUS PROCESSING AND TRADING
- MW3-08 ● GROUNDWATER MONITORING WELL LOCATION
- LIF-16 ■ LIF LOCATION (DECEMBER 2009)
- SB-17 ● SOIL BORING LOCATION (DECEMBER 2009)
- TW-2 ● TEST RECOVERY WELL LOCATION
- MW11-12 ○ LNAPL SENTRY WELL LOCATION
- LIF ● LASER INDUCED FLUORESCENCE

figure 2
DECEMBER 2009 OFF-SITE SOIL BORING/LIF LOCATIONS
METHANE INVESTIGATION
DEARBORN REFINING SITE
Dearborn, Michigan





SOURCE: (1) 2005 AERIAL IMAGE FOR WAYNE COUNTY, MICHIGAN UTM ZONE 17 NAD83.
IMAGE PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE
(USDA) AS PART OF THE NORTH AMERICAN IMAGE PROGRAM (NAIP).

(2) FIGURE 2. BASELINE ENVIRONMENTAL ASSESSMENT REPORT PREPARED BY BILLINGS INDUSTRIAL GROUP, INC. AND DATED JULY 19, 2000.

- LEGEND**
- APPROXIMATE CURRENT DEARBORN REFINING PROPERTY BOUNDARY
 - APPROXIMATE FORMER DEARBORN REFINING PROPERTY, CURRENTLY FERROUS PROCESSING AND TRADING
 - MW3-08 GROUNDWATER MONITORING WELL LOCATION
 - SB-17 SOIL BORING LOCATION (DECEMBER 2009)
 - TW-2 TEST RECOVERY WELL LOCATION
 - MW11-12 LNAPL SENTRY WELL LOCATION
 - LIF-16 SOIL BORING/LIF LOCATION (DECEMBER 2009)
 - 54.7 MAXIMUM FLUORESCENCE (%)
 - @0.19' DEPTH (FEET BELOW GROUND SURFACE)
 - LIF LASER INDUCED FLUORESCENCE

- MAXIMUM FLUORESCENCE <10 %RE
MAXIMUM FLUORESCENCE 10-50 %RE
MAXIMUM FLUORESCENCE 50-100 %RE
MAXIMUM FLUORESCENCE 100-200 %RE
MAXIMUM FLUORESCENCE 200-300 %RE
MAXIMUM FLUORESCENCE >300 %RE
- NOTES:
(1) INITIAL LIF BORING (LIF-39) WAS TERMINATED AT 4.69 FEET BELOW GROUND SURFACE DUE TO REFUSAL.
(2) TWO LIF BORINGS WERE ADVANCED AT THIS LOCATION TO CONFIRM LIF READINGS.

figure 3
DECEMBER 2009 LIF MAXIMUM FLUORESCENCE
METHANE INVESTIGATION
DEARBORN REFINING SITE
Dearborn, Michigan

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
1	0	3	0.3	0.4	18.6	1
1	3	5	0.2	1.5	6.3	1
1	5	7	0.2	2.8	6.9	1
2	0	3	0.0	0.0	19.6	1
2	3	5	0.1	0.0	10.6	1
2	5	7	0.1	0.0	16.9	1
2	7	9	0.1	0.0	16.1	1
2	9	11	0.0	0.1	19.2	1
2	11	13	0.0	0.1	20.6	1
2	13	15	0.0	0.1	20.2	1
3	0	3	0.0	0.2	20.2	1
3	3	5	0.5	1.0	15.9	1
3	5	7	0.2	0.2	19.8	1
3	7	9	Product on tip of screen	NM	NM	NM
4	0	3	0.3	0.0	20.9	1
4	3	5	0.1	1.2	14.9	1
4	5	7	0.1	1.5	14.3	1
4	7	9	0.2	1.8	14.9	1
4	9	11	Water	NM	NM	NM
5	0	3	0.0	0.3	20.0	1
5	3	5	0.1	3.1	11.3	1
5	5	7	0.2	3.2	11.0	1
5	7	9	0.1	1.3	14.6	1
6	0	3	Water	NM	NM	NM
7	0	3	1.6	0.1	19.2	1
7	3	5	3.8	0.2	18.7	1
7	5	7	13.7	1.0	16.7	1
7	7	9	15.1	0.7	16.5	1
7	9	11	55.7	1.3	9.7	1
7	11	13	16.9	0.4	16.4	1
7	13	15	83.5	1.1	3.6	1
7	15	17	98.8	1.5	0.0	1
8	0	3	0.1	0.2	18.8	1
8	3	5	0.5	0.1	18.8	1
8	5	7	2.5	0.1	18.8	1
8	7	9	24.3	0.2	14.3	1
8	9	11	39.9	0.2	10.0	1
8	11	13	12.2	0.1	16.4	2

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
	9	0	3	3.4	0.1	19.1
	9	3	5	12.6	0.4	15.6
	9	5	7	34.7	0.9	7.9
	9	7	9	32.2	0.9	8.2
	10	0	3	0.0	0.0	21.0
	10	3	5	0.1	0.1	20.6
	10	5	7	1.1	2.8	10.5
	10	7	9	0.3	0.0	20.4
	10	9	11	No flow	NM	NM
	11	0	3	0.0	0.1	21.4
	11	3	6	0.9	3.1	10.9
	11	6	8	0.1	0.4	20.3
	11	8	10	5.8	4.2	5.6
	11	10	12	No flow	NM	NM
	12	0	3	0.0	0.1	21.4
	12	3	6	No flow	NM	NM
	13	0	3	0.0	0.0	20.8
	13	3	5	0.1	1.6	12.6
	13	5	7	0.1	2.4	8.6
	13	7	9	Water	NM	NM
	14	0	3	0.0	0.1	21.0
	14	3	5	0.6	0.0	19.0
	14	5	7	0.0	0.0	20.9
	14	7	9	0.3	0.1	18.6
	14	9	11	0.1	0.0	20.0
	14	11	13	0.0	0.0	20.8
	14	13	15	0.2	0.0	20.4
	14	15	17	0.8	0.6	18.6
	14	17	19	0.5	3.4	17.5
	14	19	21	Water	NM	NM
	15	0	3	0.3	0.0	20.3
	15	3	5	1.0	0.0	19.3
	15	5	7	0.8	0.0	19.0
	15	7	9	No flow	NM	NM
	16	0	3	Water	NM	NM
	17	0	3	0.6	0.2	17.8
	17	3	5	0.4	3.0	6.0
	17	5	7	0.2	3.3	4.8
	17	7	9	0.2	3.5	4.7
	17	9	11	0.2	4.0	3.3
	17	11	13	Water	NM	1

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
18	0	3	1.6	0.1	21.1	1
18	3	5	3.5	2.5	0.0	1
18	5	7	4.1	2.1	0.0	1
18	7	9	Water	NM	NM	NM
19	0	3	13.3	1.8	8.4	1
19	3	5	18.3	3.0	1.1	1
19	5	7	17.7	2.8	5.1	1
19	7	9	Water	NM	NM	NM
20	0	3	0.1	0.2	21.2	1
20	3	5	72.8	0.2	0.8	1
20	5	7	Water	NM	NM	NM
21	0	3	5.3	0.0	17.4	1
21	3	5	6.3	0.0	16.8	1
21	5	7	5.2	0.0	17.5	1
21	7	9	89.9	1.3	1.4	1
21	9	11	Water	NM	NM	NM
22	0	3	0.2	0.0	21.0	1
22	3	5	1.0	0.0	18.4	1
22	5	7	97.1	0.0	0.0	1
22	7	9	96.4	0.5	0.0	1
22	9	11	Water	NM	NM	NM
23	0	3	0.1	0.8	19.4	1
23	3	5	0.9	0.4	19.0	1
23	5	7	22.8	0.6	10.4	1
23	7	9	0.6	0.2	21.2	1
23	9	11	77.4	1.1	2.2	1
23	11	13	81.3	1.1	0.0	1
23	13	15	No flow	NM	NM	NM
24	0	3	0.7	0.9	16.5	1
24	3	5	17.9	0.7	11.7	1
24	5	7	47.9	0.1	6.5	1
24	7	9	Water	NM	NM	NM
25	0	3	1.6	0.0	19.5	2
25	3	5	12.4	0.1	17.2	1
25	5	7	21.8	0.1	12.2	1
25	7	9	Water	NM	NM	NM
26	0	3	0.6	0.3	17.3	1
26	3	5	1.0	0.3	15.9	1
26	5	7	2.9	0.1	12.7	1
26	7	9	0.0	0.1	20.7	2
26	9	11	0.1	0.1	20.2	1
26	11	13	1.7	0.0	18.7	1
26	13	15	No flow	NM	NM	NM

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
27	0	3	0.0	0.1	21.0	1
27	3	5	1.2	0.8	11.4	1
27	5	7	1.4	0.8	10.1	1
27	7	9	1.5	0.1	10.5	1
27	9	11	Water	NM	NM	NM
28	0	3	0.0	0.3	20.8	1
28	3	5	0.0	4.4	10.5	1
28	6	8	0.0	2.0	16.5	1
29	0	3	0.0	0.0	20.5	1
29	3	5	0.8	1.9	6.2	2
29	5	7	1.1	2.4	2.6	1
29	7	9	1.2	2.3	2.6	1
29	9	11	Water	NM	NM	NM
30	0	3	26.3	0.0	0.3	3
30	3	5	27.5	0.0	0.0	1
30	5	7	29.1	0.0	0.0	1
30	7	9	25.8	0.0	0.0	2
30	9	11	Water	NM	NM	NM
31	0	3	0.0	0.0	19.9	1
31	3	5	Refusal	NM	NM	NM
32	0	3	2.6	0.0	17.6	1
32	3	5	66.3	0.0	1.4	1
32	5	7	72.6	0.0	0.0	1
32	7	9	74.8	0.1	0.0	1
32	9	11	Water	NM	NM	NM
33	0	3	0.6	0.0	19.2	1
33	3	5	25.5	0.1	11.8	1
33	5	7	16.3	0.1	13.5	1
33	7	9	2.0	0.0	17.9	1
33	9	11	5.9	0.0	18.6	1
33	11	13	2.9	0.0	19.8	1
33	13	15	6.3	0.2	18.8	1
33	15	17	30.0	0.8	12.4	1
33	17	19	Water	NM	NM	NM
34	0	3	0.2	0.3	15.9	1
34	3	5	0.8	0.3	16.1	1
34	5	7	Water	NM	NM	NM
40	0	3	1.1	0.0	19.2	1
40	3	5	52.6	4.5	6.5	1
40	5	7	71.7	5.0	3.1	1

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
41	0	3	0.2	0.3	20.2	1
41	3	5	0.7	0.7	17.8	1
41	5	7	1.6	1.5	8.4	1
41	7	9	0.2	0.2	17.5	1
41	9	11	0.0	0.1	20.5	1
41	11	13	0.0	0.0	20.7	1
41	13	15	0.0	0.0	20.6	1
41	15	17	0.1	0.5	17.7	1
41	17	19	0.3	0.1	19.5	1
41	19	21	Water	NM	NM	NM
42	0	3	0.1	0.1	16.7	1
42	3	5	94.0	0.6	0.0	1
42	5	7	94.4	0.5	0.0	1
42	7	9	94.6	0.3	0.0	1
42	9	11	94.5	0.4	0.0	1
42	11	13	Water	NM	NM	NM
43	0	3	0.0	0.0	20.2	1
43	3	5	21.0	0.0	2.1	1
43	5	7	24.0	0.0	0.0	1
43	7	9	28.2	0.0	0.0	1
43	9	11	Water	NM	NM	NM
44	0	3	0.3	0.0	19.6	1
44	3	5	9.6	0.0	7.4	1
44	5	7	20.7	0.0	0.0	1
44	7	9	57.5	0.0	0.0	1
44	9	11	Water	NM	NM	NM
45	0	3	0.0	0.2	19.9	1
45	3	5	34.1	0.0	1.5	1
45	5	7	38.8	0.0	0.0	1
45	7	9	Water	NM	NM	NM
46	0	3	0.0	0.0	20.6	3
46	3	5	0.2	0.6	10.7	3
46	5	7	0.3	1.6	5.2	3
47	0	3	0.0	0.1	20.4	3
47	3	5	0.8	0.1	19.6	3
47	5	7	24.8	0.1	8.3	5
47	7	9	24.9	0.1	6.8	5
47	9	11	34.1	0.0	3.9	3
48	0	3	0.0	0.3	20.9	3
48	3	5	0.0	1.4	20.2	3
48	5	7	0.0	0.8	21.0	5
48	7	9	0.0	0.1	21.6	5
48	9	11	0.0	0.1	21.6	5
48	11	13	0.0	0.2	21.6	5

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
49	0	3	0.3	0.4	16.5	3
49	3	5	0.1	0.4	18.3	3
49	5	7	1.5	0.0	14.9	3
49	7	9	0.0	0.0	21.7	3
49	9	11	0.0	0.0	21.7	5
50	0	3	0.0	0.1	20.3	3
50	3	5	0.0	0.0	20.3	3
50	5	7	27.3	0.0	1.7	5
50	7	9	14.5	0.0	12.5	3
51	0	3	0.0	0.3	21.2	3
51	3	5	0.0	0.3	21.1	3
51	5	7	0.0	0.2	21.4	5
51	7	9	0.0	0.2	21.6	5
51	9	11	0.0	0.3	21.2	5
51	11	13	0.0	0.1	21.6	5
52	0	3	0.0	0.1	20.3	3
52	3	5	1.5	0.0	15.4	3
52	5	7	25.6	1.0	3.4	5
52	7	9	5.6	0.3	18.3	3
52	9	11	3.5	0.1	16.5	3
52	11	13	0.6	0.0	21.7	5
53	0	3	0.0	0.0	21.1	3
53	3	5	13.0	0.0	10.5	5
53	5	7	24.8	0.0	0.8	5
56	0	3	0.2	0.0	21.1	3
56	3	5	23.9	0.0	0.4	5
56	5	7	28.8	0.0	0.0	3
56	7	9	2.8	0.0	20.2	3
56	9	11	8.6	0.0	14.8	5
56	11	13	1.8	0.0	21.4	3
59	0	3	0.2	0.0	20.6	3
59	3	5	23.6	0.0	3.7	5
59	5	7	24.5	0.0	3.1	3
59	7	9	10.6	0.0	14.5	3
59	9	11	5.5	0.0	14.8	3
59	11	13	24.4	0.0	3.2	3
59	13	15	7.8	0.0	15.4	3
59	15	17	15.0	0.0	10.1	5
59	17	19	9.2	0.0	14.0	3

Table 1

Methane Monitoring
Methane Gas Investigation (November and December 2016)
Former Dearborn Refining Site
Dearborn, Michigan

Bar hole Location	Monitoring Interval start ID	Monitoring Interval end (ft bgs)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Time Purged (minutes)
61	0	3	0.0	0.0	19.1	3
61	3	5	33.4	0.0	12.6	3
61	5	7	0.0	0.0	21.6	5
61	7	9	0.0	0.1	21.7	2
61	9	11	0.0	0.1	21.7	2

Notes:

ft feet
 bgs below ground surface
 NM Not measured

Attachment 1

LIF Logs



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-22
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SC-CLAYEY SAND, fine grained, trace coarse grained and coarse gravel, poorly graded, loose to compact, brown, moist CONCRETE	0.10 0.60		1DP		100	2.8
4	CL-SANDY CLAY, with silt, poorly graded, low plasticity, firm, brown, moist - black, petroleum-like odor at 4.0ft BGS - glass debris, very moist at 4.5ft BGS			2DP		45	10.3
6	- concrete at 6.5ft BGS - no concrete at 6.7ft BGS			3DP		20	50.0
8				4DP		15	34.1
10	- with metal, glass and wood debris, saturated at 10.0ft BGS			5DP		60	16.9
12							21.8
14							2.5
16							1.6
18							
20	CH-CLAY, with silt, poorly graded, high plasticity, soft, very moist	19.25					
22							
24							
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-23
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	CL-CLAY, with sand, fine to coarse grained, trace fine to coarse gravel, poorly graded, low plasticity, stiff, brown, moist GP/SP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, gray, moist WOOD DEBRIS BRICK DEBRIS, orange CONCRETE CL-SILTY CLAY, trace fine to coarse gravel, poorly graded, low plasticity, firm, olive green, moist, mottled, black staining WOOD DEBRIS CL-SILTY CLAY, trace fine to coarse gravel, poorly graded, low plasticity, firm, olive green, moist, mottled, black staining - brick debris, orange at 6.0ft BGS BRICK DEBRIS, orange SP-SAND, with gravel, silt and bottom ash, fine grained sand, fine to coarse gravel, poorly graded, loose to compact, black, very moist - saturated, free product present at 10.0ft BGS	0.20 0.50 0.60 1.00 2.00 4.50 4.70 8.00 9.00 19.80 25.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP		70	2.3
4				2DP		75	1.4
6							5.7
8							73.9
10				3DP		30	95.6
12							
14				4DP		10	9.0
16							
18							
20	CH-CLAY, trace silt, poorly graded, moderate plasticity, firm to soft, gray, moist			5DP		50	1.8
22	END OF BOREHOLE @ 25.0ft BGS						
24							
26							
28							
30							
32							
34							
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-24
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
0	GP-GRAVEL, with sand, fine to coarse gravel, fine sand, moderately graded, loose, brown, moist	0.75					0.6
2	SP-SAND, fine grained, with medium to coarse grained, fine to coarse gravel and slag, poorly graded, loose, brown, moist	1.75					1.0
4	CL-CLAY, with silt and sand, fine grained, trace coarse gravel, poorly graded, low plasticity, firm, black, moist	2.50					1.6
6	CONCRETE	3.00					1.2
8	SP-SAND, fine grained, with slag, poorly graded, loose, black, moist	3.50					1.9
10	CL-SILTY CLAY, trace medium to coarse sand, and fine to coarse gravel, poorly graded, low plasticity ,firm to stiff, olive green, moist, mottled	8.50					0.9
12	SC-CLAYEY SANDS, fine grained, with fine gravel, poorly graded, loose to compact, dark gray, saturated	15.00					
14		20.00					
16	CL-CLAY, with silt, poorly graded, moderate plasticity, soft, gray, very moist						
18							
20	END OF BOREHOLE @ 20.0ft BGS						
22							
24							
26							
28							
30							
32							
34							
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-25
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	CL-CLAY, trace sand, silt, gravel and glass, fine sand, fine to coarse gravel, poorly graded, low plasticity, firm, dark brown to black, moist	2.50		1DP		80	7.2
4	CH-SILTY CLAY, trace fine to coarse sand and fine gravel, poorly graded, moderate plasticity, firm, brown, moist - soft, very moist at 5.0ft BGS	2.50		2DP		55	42.0
6				3DP		10	1.9
8				4DP		50	1.9
10	- firm, moist, black staining at 10.0ft BGS						3.7
12							2.8
14							1.5
16							
18							
20	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, compact, brown, moist CL-SILTY CLAY, poorly graded, low plasticity, firm, gray, moist	19.00 19.25 20.00					
22	END OF BOREHOLE @ 20.0ft BGS						
24							
26							
28							
30							
32							
34							
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-26
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP-SAND, fine grained, with medium to coarse grained and fine to coarse gravel, poorly graded, loose to compact, brown, moist - brown and black at 2.0ft BGS			1DP		75	2.1
4	- brown at 3.5ft BGS - with slag at 4.0ft BGS - black, very moist at 4.7ft BGS - trace clay, saturated at 5.0ft BGS			2DP		70	1.9
6				3DP		95	0.4
8				4DP		90	0.4
10				5DP			1.1
12							0.3
14	COAL PIECES	14.25					0.0
16	SP-SAND, fine grained, poorly graded, loose to compact, black, saturated	15.50					0.0
18							0.0
20	CH-SILTY CLAY, poorly graded, high plasticity, soft to firm, gray, very moist	19.00					0.0
22							0.0
24							
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-27
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP-SAND, with gravel, fine sand, coarse gravel, with fine gravel, poorly graded, loose to compact, brown, moist WOOD DEBRIS GP-GRAVEL, fine grained, with fine sand, poorly graded, loose, brown, moist	0.25 1.25 2.30 2.50 3.00	2-1/4" BOREHOLE	1DP		90	0.0
4	SP-SAND, with gravel, fine grained sand, fine to coarse gravel, poorly graded, compact, brown, moist	5.00	BACKFILLED WITH SOIL CUTTINGS	2DP		80	2.8
6	COAL	7.00		3DP		60	0.0
8	SP-SAND, with gravel, fine grained sand, fine to coarse gravel, poorly graded, compact, brown and black, moist - with slag at 4.0ft BGS	8.25		4DP		10	1.3
10	CL-CLAY, trace silt, poorly graded, low plasticity, firm, brown, moist - firm to stiff at 5.5ft BGS	14.00		5DP		60	0.3
12	BOTTOM ASH, trace glass, black, saturated	15.00					
14	SP-SAND, with clay, fine grained, poorly graded, compact, black, saturated						
16	CL-SILTY CLAY, trace medium to coarse sand, poorly graded, low plasticity, firm, brown, moist, mottled						
18	CH-SILTY CLAY, with silt, poorly graded, moderate plasticity, firm, gray, very moist						
20							
22	- soft to firm at 22.0ft BGS						
24	END OF BOREHOLE @ 25.0ft BGS	25.00					
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-28
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP-SAND, with gravel, fine grained, fine to coarse gravel, poorly graded, loose, brown, moist CONCRETE	0.15 1.00		1DP		95	0.0	0.0
4	SP-SAND, fine grained, with slag, trace glass, poorly graded, compact, brown, moist	3.50						1.7
6	CL-SILTY CLAY, trace fine to medium sand and fine gravel, poorly graded, low plasticity, firm, brown, moist, mottled - moderate plasticity, soft to firm, very moist at 5.0ft BGS							0.3
8	- wood debris at 8.0ft BGS - no wood debris at 8.2ft BGS			2DP		65	0.7	0.7
10								0.8
12	- increase in silt, low plasticity at 12.0ft BGS			3DP		60	0.3	0.3
14								0.8
16				4DP		80	1.2	1.2
18								
20	CONCRETE DEBRIS END OF BOREHOLE @ 20.0ft BGS	19.50 20.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS					
22								
24								
26								
28								
30								
32								
34								
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-29
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP-SAND, fine grained, with fine to coarse gravel, poorly graded, loose, brown, moist ASPHALT BRICK DEBRIS, orange CL-SILTY CLAY, trace fine sand, poorly graded, low plasticity, firm to stiff, brown, moist SP-SAND, trace clay, fine grained, poorly graded, loose to compact, brown, moist CL-CLAY, with silt, trace medium to coarse sand and fine gravel, poorly graded, low to moderate plasticity, firm, brown, moist, mottled - moderate plasticity at 5.0ft BGS	0.15 0.50 1.75 2.50 3.00		1DP		90	0.0
4			2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	2DP		50	1.1
6				3DP		65	0.8
8				4DP		50	0.4
10							0.1
12							0.0
14							0.2
16							0.3
18	- with coal at 18.5ft BGS - no coal at 18.7ft BGS						
20	END OF BOREHOLE @ 20.0ft BGS	20.00					
22							
24							
26							
28							
30							
32							
34							
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-30
DATE COMPLETED: December 8, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SC-CLAYEY SAND, with gravel, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist SP-SAND, fine grained, trace wood, poorly graded, loose to compact, black, moist CONCRETE BRICK DEBRIS, orange CL-CLAY, with silt, poorly graded, low plasticity, firm, black, moist SP-SAND, with bottom ash and gravel, fine grained sand, fine to coarse gravel, trace glass, poorly graded, compact, black, moist - trace bottom ash and fine gravel, no glass at 3.8ft BGS - with bottom ash and fine to coarse gravel, trace glass at 10.0ft BGS	0.75 1.25 1.50 1.70 2.50	15.00	2-1/4" BOREHOLE	1DP	80	1.0
4	NO RECOVERY	15.00	BACKFILLED WITH SOIL CUTTINGS	2DP	50	5.3	
6		20.00		3DP	10	1.4	
8		25.00		4DP	0	2.9	
10				5DP	80	1.1	
12							--
14							
16							
18							
20	CH-CLAY, trace silt, poorly graded, moderate plasticity, firm to soft, gray, moist	20.00					1.6
22							
24	END OF BOREHOLE @ 25.0ft BGS	25.00					1.4
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-31
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine to coarse sand, fine to coarse gravel, poorly graded, loose, brown, moist WOOD SLAG WOOD	0.50 1.50 2.00 2.50		1DP		95	1.1
4	CL-SILTY CLAY, with gravel, fine to coarse grained, poorly graded, low plasticity, firm, brown, moist, mottled, some staining - slight petroleum-like odor at 4.0ft BGS	6.00		2DP		65	4.2
6	SP-SAND, with bottom ash, coal and gravel, fine sand, fine to coarse gravel, poorly graded, compact, black, moist	8.00		3DP		25	5.9
8	BRICK DEBRIS, orange	8.25		4DP		25	5.8
10	SP-SAND, with clay, bottom ash and gravel, fine sands, fine to coarse gravel, poorly graded, compact, black, moist - saturated at 9.0ft BGS			5DP		95	3.7
12							
14							
16							
18	CL-CLAY, with silt, poorly graded, low plasticity, firm ,gray, moist to very moist - trace silt at 20.0ft BGS	18.00					1.0
20							
22							
24							
26	END OF BOREHOLE @ 25.0ft BGS	25.00					0.8
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-32
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	GP-GRAVEL, coarse grained with fine grained and fine sand, poorly graded, loose, gray, saturated SP-GRAVELLY SAND, fine sand, fine to coarse gravel, with slag, poorly graded, loose to compact, brown, moist	1.00 1.75 3.00 3.25 5.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP		95	4.0
4	CL-CLAY, with sand, silt and slag, fine to coarse sand, trace fine to coarse gravel and orange brick debris, poorly graded, low plasticity, firm, gray, moist, some staining			2DP		0	1.7
6	BOTTOM ASH						--
8	CL-CLAY, with silt, trace medium to coarse sand and fine to coarse gravel, poorly graded, low plasticity, firm, gray, moist, slightly mottled, some staining						--
10	NO RECOVERY	10.00					
12	SP-SAND, with gravel, fine sand, fine to coarse gravel, poorly graded, loose, brown, saturated			3DP		5	1.4
14							
16	CL-CLAY, with silt, trace fine to coarse gravel, poorly graded, high plasticity, firm, brown, moist, mottled	15.00					0.2
18	CONCRETE	17.00 17.25		4DP		50	0.4
20	CL-CLAY, with silt, trace fine to coarse gravel, poorly graded, high plasticity, firm, brown, moist, mottled	20.00					0.6
22	CH-CLAY, trace silt, poorly graded, low to moderate plasticity ,firm, brown, moist						
24	- with silt, soft to firm, very moist at 24.0ft BGS			5DP		95	0.8
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

OVERBURDEN LOG 48041-WIN.GPJ CRA CORP-SPANISH GDT 12/22/09

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-33
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine gravel, with coarse gravel, poorly graded, loose, brown, moist GP-GRAVEL, fine grained, with fine sand, poorly graded, loose, brown, moist	0.50 1.00		1DP		65	0.6
4	SP-SAND, fine grained, trace slag, poorly graded, compact, brown, moist - with clay, trace coarse gravel, saturated at 5.0ft BGS	6.00		2DP		65	1.2
6	BOTTOM ASH, with slag, black, saturated			3DP		65	0.5
8				4DP		60	1.1
10							1.6
12							2.0
14	WOOD DEBRIS GP-GRAVEL, coarse grained, with fine grained, trace glass, poorly graded, loose, gray, saturated	13.00 13.25 14.00					2.3
16	CL-SILTY CLAY, poorly graded, low plasticity, firm, brown, very moist, mottled - not mottled at 17.0ft BGS						1.2
18							
20	END OF BOREHOLE @ 20.0ft BGS	20.00					
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-34
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, with medium to coarse sand, poorly graded, loose, brown, moist - trace metal debris, compact at 0.5ft BGS	2.00 2.50	2-1/4" BOREHOLE	1DP		95		0.4
4	CONCRETE DEBRIS CL-SILTY CLAY, poorly graded, low plasticity, firm, gray, moist - brown, mottled at 3.3ft BGS		BACKFILLED WITH SOIL CUTTINGS	2DP		95		1.3
6				3DP		90		1.0
8				4DP		80		1.2
10								0.7
12	- trace fine sand, soft to firm, very moist at 12.0ft BGS							1.0
14								0.5
16								0.2
18								
20	- gray at 19.0ft BGS END OF BOREHOLE @ 20.0ft BGS	20.00						
22								
24								
26								
28								
30								
32								
34								
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-35
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP-SAND, with gravel, fine sand, fine to coarse gravel, trace orange brick, poorly graded, loose, brown, saturated	0.70					0.4
4	CL-SILTY CLAY, with sand, fine to coarse grained, trace fine to coarse gravel, poorly graded, low plasticity, firm, brown, moist - trace fine to coarse sand, no gravel, mottled at 1.3ft BGS - black, not mottled at 2.3ft BGS - olive green, mottled at 2.5ft BGS	3.00		1DP		80	1.2
6	SP-SAND, with bottom ash, slag and gravel, fine sand, fine to coarse gravel, trace orange brick, poorly graded, compact, brown, moist	5.00					1.4
8	CL-SILTY CLAY, trace fine to coarse gravel, poorly graded, low plasticity, firm, black and brown, moist, slightly mottled	7.50		2DP		70	0.2
10	CL-SANDY CLAY, with silt and gravel, fine sand, fine to coarse gravel, poorly graded, low plasticity, soft, gray, very moist - saturated at 9.0ft BGS - black and gray at 9.5ft BGS - gray at 10.0ft BGS - firm at 14.0ft BGS - soft to firm at 15.0ft BGS			3DP		70	0.9
12				4DP		60	0.4
14							0.2
16							0.1
18							
20	CL-SILTY CLAY, poorly graded, low plasticity, firm, brown, moist	19.00					
	END OF BOREHOLE @ 20.0ft BGS	20.00					
22							
24							
26							
28							
30							
32							
34							
<p><u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE</p>							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-36
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP-SAND, with gravel, fine grained sand, fine to coarse gravel, trace orange brick debris, poorly graded, loose, brown, moist	1.00						0.1
4	CL-SILTY CLAY, with sand, fine to coarse grained, trace fine gravel, poorly graded, low plasticity, firm to stiff, brown, moist, mottled	3.00						0.5
6	SP-SAND, with slag and gravel, fine grained sand, fine to coarse gravel, poorly graded, compact, brown, moist	5.00						0.1
8	CH-CLAY, with silt, poorly graded, high plasticity, firm, gray, moist							0.1
10	- trace fine sand, firm to soft at 8.5ft BGS							0.3
12	- soft at 10.0ft BGS							0.3
14	- firm at 14.5ft BGS							0.4
16	- soft to firm at 15.0ft BGS							0.9
18								0.3
20	END OF BOREHOLE @ 20.0ft BGS	20.00						
22								
24								
26								
28								
30								
32								
34								
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-37
DATE COMPLETED: December 9, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SC-CLAYEY SAND, with gravel, fine sand, fine to coarse gravel, poorly graded, loose, brown, saturated - very moist at 0.5ft BGS	1.00					0.3
4	SP-SAND AND SLAG, fine grained, poorly graded, compact, brown to black, moist	2.00					0.5
6	CL-SILTY CLAY, trace fine to coarse gravel, poorly graded, low plasticity, stiff, gray, moist - no gravel at 7.0ft BGS	5.00					2.0
8							0.8
10	- soft at 9.0ft BGS - firm to soft at 10.0ft BGS						1.0
12							0.8
14	- no sand at 14.0ft BGS						1.0
16							0.9
18	CL-SILTY CLAY, poorly graded, low plasticity, firm, gray, moist	18.50					
20	END OF BOREHOLE @ 20.0ft BGS	20.00					
22							
24							
26							
28							
30							
32							
34							
<p><u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE</p>							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-38
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	CONCRETE	2.00						0.0
2.50								
2.65								
2.80								
3.25								
4.00								
4	CL-CLAY, with sand and silt, fine to coarse grained, poorly graded, low plasticity, firm, gray, moist	2.00	2-1/4" BOREHOLE	1DP		90		0.3
4	BRICK DEBRIS, orange	2.50						
4	WOOD DEBRIS	2.65						
6	CONCRETE DEBRIS	2.80						
6	BRICK DEBRIS, orange	3.25						
8	CL-SANDY CLAY, fine sand, with medium to coarse sand and fine gravel, poorly graded, low plasticity, firm, dark gray, saturated, slight petroleum-like odor	4.00	BACKFILLED WITH SOIL CUTTINGS	2DP		70		5.8
8		8.25						
8		8.50						
10	CONCRETE DEBRIS	9.50						
10	CH-CLAY, with silt, trace fine sand and fine to coarse gravel, poorly graded, high plasticity, soft to firm, brown, moist	10.00						
12	CH-CLAY, with silt, trace fine sand and fine to coarse gravel, poorly graded, high plasticity, soft to firm, brown, moist							2.2
12	CONCRETE DEBRIS							
14	CH-CLAY, with silt, trace fine sand and fine to coarse gravel, poorly graded, high plasticity, soft to firm, brown, moist							1.9
14	- with orange brick debris at 14.3ft BGS							
14	- no orange brick debris at 14.5ft BGS							
14	- with coal at 14.8ft BGS							
14	- no coal at 15.0ft BGS							
18	- dark brown to black at 18.0ft BGS							
19	BOTTOM ASH, black, saturated	18.50						0.0
19	CL-SILTY CLAY, poorly graded, low plasticity, firm, gray, moist	19.00						
19	- with silt, trace fine sand, soft to firm, moist to very moist at 20.0ft BGS							
22								
24								
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-39
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist CONCRETE	0.25 1.25	2-1/4" BOREHOLE	1DP		95	2.3
4	CL-SILTY CLAY, with sand and gravel, fine sand, fine to coarse gravels, poorly graded, low plasticity, firm, brown and olive green, moist, mottled	3.00 4.00 5.00	BACKFILLED WITH SOIL CUTTINGS			70	2.1
6	CONCRETE	7.00 7.50		2DP		0	2.0
8	SP-SAND AND SLAG, fine grained, poorly graded, compact, black, moist, slight petroleum-like odor	8.25		3DP		30	5.0
10	SP-GRAVELY SAND, fine sand, fine to coarse gravel, poorly graded, loose to compact, brown, moist BRICK DEBRIS, orange	10.00		4DP		65	--
12	CL-SILTY CLAY, trace medium to coarse sand, poorly graded, low plasticity, firm, brown, moist, mottled	15.00		5DP		30	1.9
14	SP-SAND, with bottom ash and gravel, fine sand, fine gravel, poorly graded, loose, brown and black, saturated	19.00					1.3
16	NO RECOVERY	23.0ft BGS					0.9
18	SP-SAND, with bottom ash and gravel, fine sand, fine gravel, poorly graded, loose, black, saturated	25.00					
20	CL-SILTY CLAY, poorly graded, moderate plasticity, firm, gray, moist						
22	- trace fine sand, low plasticity, soft, very moist at 23.0ft BGS						
24	END OF BOREHOLE @ 25.0ft BGS						
26							
28							
30							
32							
34							

OVERBURDEN LOG 48041-WIN.GPJ CRA CORP-SPANISH GDT 12/22/09

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-40
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist SP-SAND, with slag, fine grained, trace coal, poorly graded, loose to compact, black, moist	0.50		1DP		70	0.2
4				2DP		60	1.3
6							0.7
8	- saturated at 8.5ft BGS						0.0
10	- no slag or coal, loose, brown at 9.8ft BGS NO RECOVERY	10.00					--
12				3DP		0	
14							
16	SP-SAND, fine grained, trace fine to coarse grained, poorly graded, compact, black, saturated - loose to compact at 16.0ft BGS	15.00					1.2
18	- with slag and coal at 19.0ft BGS			4DP		60	0.0
20	CL-SILTY CLAY, poorly graded, low plasticity, firm, gray and black, moist - gray at 20.0ft BGS	19.50					0.9
22	- soft, very moist at 23.0ft BGS			5DP		70	0.7
24							
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-41
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist CONCRETE	0.20						0.0
4	CONCRETE DEBRIS	3.50						0.0
6	WOOD DEBRIS	4.50						0.1
8	BRICK DEBRIS, orange	5.00						0.2
10	SP-SAND, with gravel, fine sand, fine to coarse gravel, trace glass, poorly graded, compact, dark gray to black, very moist - with clay, black at 9.3ft BGS - with bottom ash, no clay at 9.5ft BGS	5.25						
12	NO RECOVERY	10.00						--
14								
16	CL-CLAY, with silt, poorly graded, moderate plasticity, firm to soft, brown, moist	15.00						0.0
18								0.0
20	- gray at 20.0ft BGS							0.0
22	- soft, very moist at 23.0ft BGS							0.0
24								0.0
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-42
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist BRICK DEBRIS, orange	2.00 2.10		1DP		95	0.0	0.0
4	CL-CLAY, with silt, poorly graded, low plasticity, firm to stiff, dark gray, moist - brown, slightly mottled at 3.0ft BGS - mottled at 5.0ft BGS			2DP		80	0.0	0.0
8	CH-CLAY, with silt, trace fine sand, poorly graded, moderate plasticity, firm to soft, brown, moist	8.00		3DP		80	0.0	0.0
10				4DP		60	0.0	0.0
14	- gray at 15.0ft BGS						0.0	0.0
16							0.0	0.0
18							0.0	0.0
20	END OF BOREHOLE @ 20.0ft BGS	20.00						
22								
24								
26								
28								
30								
32								
34								
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-43
DATE COMPLETED: December 10, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, compact, brown, moist CONCRETE DEBRIS	1.00		1DP		95	0.8
4		6.00		2DP		60	1.4
6	SP-GRAVELLY SAND, fine sand, fine gravel, with coarse gravel, poorly graded, compact, brown, moist	9.00		3DP		30	1.1
8		15.00		4DP		60	2.2
10	SP-SAND, fine grained, trace glass, poorly graded, compact, black, very moist - with orange brick debris, saturated at 10.0ft BGS			5DP		70	1.0
12							0.4
14							0.4
16	CL-SILTY CLAY, trace fine sand, poorly graded, low plasticity, firm brown, moist						0.4
18							0.2
20	- no sand, gray at 20.0ft BGS						0.3
22	- soft, very moist at 23.0ft BGS						0.2
24	END OF BOREHOLE @ 25.0ft BGS	25.00					0.2
26							
28							
30							
32							
34							

OVERBURDEN LOG 48041-WIN.GPJ CRA CORP-SPANISH GDT 12/22/09

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-44
DATE COMPLETED: December 11, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, moderately graded, loose, brown, moist CONCRETE/CONCRETE DEBRIS	0.15					2.9
4	CL-SILTY CLAY, with sand and gravel, fine to coarse sand, fine to coarse gravel, poorly graded, low plasticity, firm, brown, moist, mottled	2.50 3.00 3.20 4.50 5.00					1.3
6	BRICK DEBRIS, orange						2.8
8	CL-SILTY CLAY, with sand and gravel, fine to coarse sand, fine to coarse gravel, poorly graded, low plasticity, firm, brown, moist, mottled - black at 4.0ft BGS	8.00					1.5
10	SP-SAND, with clay, fine grained, trace fine to coarse gravel, poorly graded, compact, brown to black, moist, slight petroleum-like odor						
12	CL-SILTY CLAY, with sand and gravel, fine to coarse sand, fine to coarse gravel, poorly graded, low plasticity, firm to stiff, olive green, moist, mottled						3.3
14	SP-SILTY SAND, fine grained, with fine to coarse gravel, slag and bottom ash, trace coal and glass, poorly graded, loose, black, very moist	15.00					
16	- saturated at 10.0ft BGS						
18	NO RECOVERY						--
20	CH-CLAY, trace silt, poorly graded, high plasticity, soft to firm, gray, very moist	20.00					0.3
24	- soft at 23.5ft BGS						1.3
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-45
DATE COMPLETED: December 11, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist	2.00		1DP		95	0.3
4	SP-SAND, with gravel, fine sand, fine to coarse gravel, trace orange brick debris and slag, poorly graded, loose to compact, black, moist - with orange brick debris at 3.0ft BGS	3.50					1.3
6	SP-SILTY SAND, fine grained, trace medium to coarse grained, poorly graded, compact, brown, moist, some staining, slight odor	4.50					4.3
8	CL-SILTY CLAY, with fine to coarse sand and fine gravel, poorly graded, low plasticity, firm, brown, moist, some staining, slight odor	6.00					12.3
10	SP-SAND, fine grained, trace coarse gravel, poorly graded, loose to compact, black, moist, slight odor	9.50					2.9
12	BRICK, orange	9.70					
14	BOTTOM ASH, trace glass						
16	CL-SILTY CLAY, poorly graded, low plasticity, firm, gray, moist - soft to firm at 15.0ft BGS	13.50					0.9
18							1.0
20	END OF BOREHOLE @ 20.0ft BGS	20.00					0.8
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 48041-WIN.GPJ CRA CORP-SPANISH GDT 12/22/09



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-46
DATE COMPLETED: December 11, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist CONCRETE	0.75 2.00 3.00 3.20	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP		95	2.5
4	SP-SAND, with gravel, fine sand, fine to coarse gravel, trace glass, poorly graded, loose to compact, black, moist SLAG			2DP		65	1.3
6	CL-SILTY CLAY, with sand, fine to coarse grained, trace fine gravel, poorly graded, low plasticity, firm, brown, moist						0.3
8	- soft to firm, olive green and gray, mottled at 4.5ft BGS - increase in fine sand, trace fine to coarse gravel at 6.0ft BGS						2.4
10	SP-SAND, with slag and bottom ash, fine grained, poorly graded, loose to compact, black, very moist - saturated at 9.8ft BGS	9.00 10.00		3DP		0	--
12	NO RECOVERY			4DP		0	--
14							
16							
18							
20	CL-CLAY, trace fine sand and silt, poorly graded, low to moderate plasticity, soft to firm, gray, very moist	20.00		5DP		60	0.3
22							
24	- low plasticity at 24.0ft BGS						0.2
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

OVERBURDEN LOG 48041-WIN-GPJ CRA CORP-SPANISH GDT 12/22/09

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-47
DATE COMPLETED: December 12, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, moderately graded, loose, brown, moist CONCRETE DEBRIS	0.50 1.00 2.50 3.75 4.50 4.80 5.00 8.75 10.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP		95	0.4	37.9
4	SM-SILTY SAND, fine grained, trace medium to coarse grained and fine gravel, poorly graded, loose to compact, brown, moist			2DP		70	542	384
6	CL-CLAY, with silt, trace medium to coarse sand and fine gravel, poorly graded, low plasticity, firm, brown, moist, some staining			3DP		0	--	180
8	SP-SAND, fine grained, trace coarse grained, poorly graded, loose to compact, gray, very moist, slight petroleum-like odor			4DP		65	85.3	2.7
10	CONCRETE DEBRIS			5DP		75	2.8	
12	SP-SAND, fine grained, trace coarse grained, poorly graded, loose to compact, gray, very moist, petroleum-like odor							
14	SC-CLAYEY SAND, fine grained trace fine to coarse gravel, poorly graded, compact, black, moist, petroleum-like odor							
16	CL-SANDY CLAY, fine grained poorly graded, low plasticity, firm, black, moist, staining, petroleum-like odor	15.00						
18	NO RECOVERY							
20	CL-SANDY CLAY, fine grained poorly graded, low plasticity, firm, black, moist, staining, petroleum-like odor	20.00						
22	CL-CLAY, trace silt, poorly graded, moderate plasticity, soft to firm, gray, moist							
24	- trace fine sand and silt, soft, very moist at 23.5ft BGS							
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								

OVERBURDEN LOG 48041-WIN.GPJ CRA CORP-SPANISH GDT 12/22/09

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-48
DATE COMPLETED: December 12, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, gray, moist SP-SAND, with gravel, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist BRICK DEBRIS, orange	1.50 2.00 2.20 2.70 3.50 5.00 7.00 10.00 15.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP	70		0.9	75.9
4	CL-SANDY CLAY, fine grained, with medium to coarse grained, poorly graded, low plasticity, firm, brown, moist			2DP	70		2.3	2.5
6	SP-SILTY SAND, fine grained, with medium to coarse grained, poorly graded, compact, brown, moist, trace staining			3DP	0		--	
8	SP-SAND, with gravel, fine sand, fine to coarse gravel, poorly graded, loose, black, moist, slight petroleum-like odor - very moist, petroleum-like odor at 4.8ft BGS			4DP	5		0.7	0.8
10	CL-CLAY, with silt, trace fine to coarse sand and fine gravel, poorly graded, low plasticity, stiff, brown, moist			5DP	80		0.8	
12	SP-SAND, fine grained, with fine to coarse gravel and bottom ash, trace glass, poorly graded, loose, black, saturated, petroleum-like odor							
14	NO RECOVERY							
16	CL-CLAY, trace silt, poorly graded, low to moderate plasticity, soft, gray, moist							
18								
20								
22	- very soft, very moist at 22.0ft BGS							
24								
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-49
DATE COMPLETED: December 12, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	GP-GRAVEL, coarse grained, trace fine sand, poorly graded, loose, gray, moist SP-SAND, with clay, fine grained, trace medium to coarse grained and fine gravel, poorly graded, loose to compact, brown, moist - trace clay and orange brick debris at 2.5ft BGS	0.30		1DP		100	0.3	0.3
4	CL-SANDY CLAY, with medium to coarse grained and fine gravel, trace coarse gravel, poorly graded, low plasticity, firm, brown, moist, mottled	3.70		2DP		70	0.5	0.5
6				3DP		50	0.6	0.6
8	- soft to firm at 8.5ft BGS - very moist at 9.0ft BGS	9.50		4DP		0	0.4	0.4
10	SP-SAND, with gravel, fine grained sand, fine to coarse gravel, poorly graded, loose, brown, saturated	13.00		5DP		95	0.3	0.3
12								0.2
14	CL-SANDY CLAY, with medium to coarse grained and fine gravel, trace fine to coarse gravel, poorly graded, low plasticity, soft to firm, brown, saturated, not mottled	15.00						
16	NO RECOVERY							--
18								
20	CL-CLAY, trace silt and fine sand, poorly graded, low to moderate plasticity, soft, gray, very moist - very soft at 21.0ft BGS	20.00						0.1
22								0.2
24								
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: SB-50
DATE COMPLETED: December 12, 2009
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL, fine sand, fine to coarse gravel, poorly graded, loose, brown, moist CONCRETE	1.00 2.00	2-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1DP		90	0.1
4	SP-SAND, with clay and gravel, fine grained, fine to coarse gravel, poorly graded, compact, brown, moist - black at 3.5ft BGS - with bottom ash at 4.5ft BGS - with bottom ash, wood and glass at 5.0ft BGS			2DP		50	2.0
6							0.6
8							0.8
10							0.7
12	CH-CLAY, with silt, poorly graded, high plasticity, firm to soft, gray, moist	12.50		3DP		60	0.5
14							0.5
16				4DP		65	0.4
18							0.3
20	- trace silt at 20.0ft BGS						0.2
22	- soft at 23.0ft BGS						
24	- with silt, firm at 24.0ft BGS			5DP		85	
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Attachment 2 Sentry Well Logs



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: MW11-12
DATE COMPLETED: September 5, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL (FILL), fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist - black at 1.3ft BGS	0.50 1.50 1.80	CONCRETE BENTONITE GROUT 2" PVC WELL CASING BENTONITE CHIPS 4-1/4" BOREHOLE 2" PVC WELL SCREEN SAND PACK	1GP		100	0.0	0.0
4	BRICK DEBRIS			2GP		75	0.0	0.0
6	CL-SANDY CLAY (FILL), fine to medium grained, low plasticity, firm, dark brown, moist - with silt and sand, fine grained, brown, mottled at 2.4ft BGS						0.0	0.0
8	- soft to firm at 5.0ft BGS - silty clay, trace sand at 5.3ft BGS						0.0	0.0
10	- 4" clayey silt seam, wet at 7.0ft BGS	10.00					0.0	0.0
12	CL-CLAY, with silt, low plasticity, soft, gray, moist to very moist						0.0	0.0
14	END OF BOREHOLE @ 15.0ft BGS	15.00	WELL DETAILS Scanned interval: 4.00 to 14.00ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 2.75 to 3.00ft BGS Material: BENTONITE CHIPS Sand Pack: 3.00 to 14.00ft BGS Material: SAND				50	0.0
16								0.0
18								0.0
20								0.0
22								0.0
24								0.0
26								0.0
28								0.0
30								0.0
32								0.0
34								0.0
<p><u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE</p>								



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: MW13-12
DATE COMPLETED: September 6, 2011
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP/GP-SAND AND GRAVEL (FILL), fine sand, coarse gravel, poorly graded, compact, brown, moist WOOD DEBRIS BRICK DEBRIS	0.50 0.65 0.90 1.50 2.00 2.25	CONCRETE BENTONITE GROUT 2" PVC WELL CASING BENTONITE CHIPS 4-1/4" BOREHOLE 2" PVC WELL SCREEN	1GP		100	11.8	
4	SP-SAND (FILL), with gravel, trace wood and brick debris, fine to medium sand, fine to coarse gravel, poorly graded, compact, dark brown, moist CONCRETE DEBRIS	5.00	SAND PACK	2GP		65	5.2	
6	SP-SAND (FILL), with gravel, clay and brick debris, fine to medium sand, fine to coarse gravel, poorly graded, compact, dark brown, moist	7.00 7.75					2.9	
8	CL-SANDY CLAY (FILL), trace silt and gravel, fine sand, fine to coarse gravel, low plasticity, firm, dark gray, moist, staining SP-SAND (FILL), with clay, trace bottom ash, wood and concrete debris, fine grained, compact, dark gray, wet			3GP		20	7.0	
10	CL-SANDY CLAY (FILL), fine grained, low plasticity, soft, dark gray, wet						14.1	
12	SP-SAND (FILL), with clay, trace glass, bottom ash, wood and concrete debris, fine grained, compact, dark gray, wet						0.6	
14								
16								
18								
20	CL-CLAY, with silt, moderate plasticity, soft to firm, gray, moist END OF BOREHOLE @ 20.0ft BGS	18.50 20.00	WELL DETAILS Screened interval: 3.00 to 19.00ft BGS Length: 16ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 2.25 to 2.50ft BGS Material: BENTONITE CHIPS Sand Pack: 2.50 to 19.00ft BGS Material: SAND				0.9	
22							0.8	
24								
26								
28								
30								
32								
34								

DEN LOG 48041-WIN GPU CRA CORP GDT 10/9/12

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE.

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: MW14-12
DATE COMPLETED: September 4, 2011
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND AND GRAVEL (FILL), fine sand, fine to coarse gravel, poorly graded, compact, brown, moist GP-GRAVEL (FILL), coarse grained, compact, brown, moist	0.65 1.20 1.75	CONCRETE BENTONITE GROUT 2" PVC WELL CASING BENTONITE CHIPS 4-1/4" BOREHOLE 2" PVC WELL SCREEN	1GP		65	0.5 1.2
4	SP-SAND (FILL), with bottom ash, trace glass, brick and coal debris, fine grained, compact, brown, moist	4.50 4.85	SAND PACK	2GP		75	20.0 2.4
6	CL-SANDY CLAY (FILL), trace coal and gravel, fine sand, fine to coarse gravel, low plasticity, stiff, dark gray to black, moist - with silt, fine to coarse sand, firm, mottled at 4.0ft BGS	7.00		3GP		40	4.0 0.3
8	SC-CLAYEY SAND (FILL), fine grained, compact, dark brown, moist to very moist			4GP		40	0.6 0.2
10	CL-CLAY (FILL), with silt, sand and brick debris, fine to medium grained, low plasticity, stiff, brown, moist - 1.5" wood debris at 6.0ft BGS - 6" brick debris at 6.3ft BGS						0.1 0.2
12	SP-SAND (FILL), with bottom ash, wood, glass and brick debris, fine grained, compact, dark brown, moist - wet at 7.5ft BGS - increase in glass debris, loose to compact at 10.0ft BGS						
14							
16							
18	CL-SILTY CLAY, low plasticity, stiff, brown, moist	18.00					
20	END OF BOREHOLE @ 20.0ft BGS	20.00					
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: MW15-12
DATE COMPLETED: September 4, 2011
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

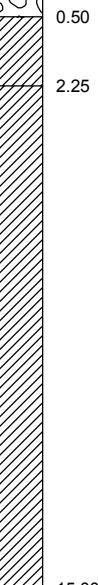


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: PRP GROUP
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: MW16-12
DATE COMPLETED: September 4, 2011
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	GP-GRAVEL (FILL), coarse grained, compact, gray, moist CL-CLAY (FILL), with silt and sand, trace gravel, fine to medium sand, fine to coarse gravel, low plasticity, stiff, brown, moist - 2" black staining at 2.0ft BGS CL-SILTY CLAY, trace fine sand, low plasticity, firm, gray, moist to very moist	0.50 2.25 15.00		1GP 2GP 3GP		100 80 40	0.1 0.1 0.0 0.0 0.0 0.0
4							
6							
8							
10							
12							
14							
16	END OF BOREHOLE @ 15.0ft BGS		WELL DETAILS Screened interval: 4.00 to 14.00ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 2.75 to 3.00ft BGS Material: BENTONITE CHIPS Sand Pack: 3.00 to 14.00ft BGS Material: SAND				
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Attachment 3 Photographs



Photo 1 – Ferrous Processing and Trading Building

November 22, 2016

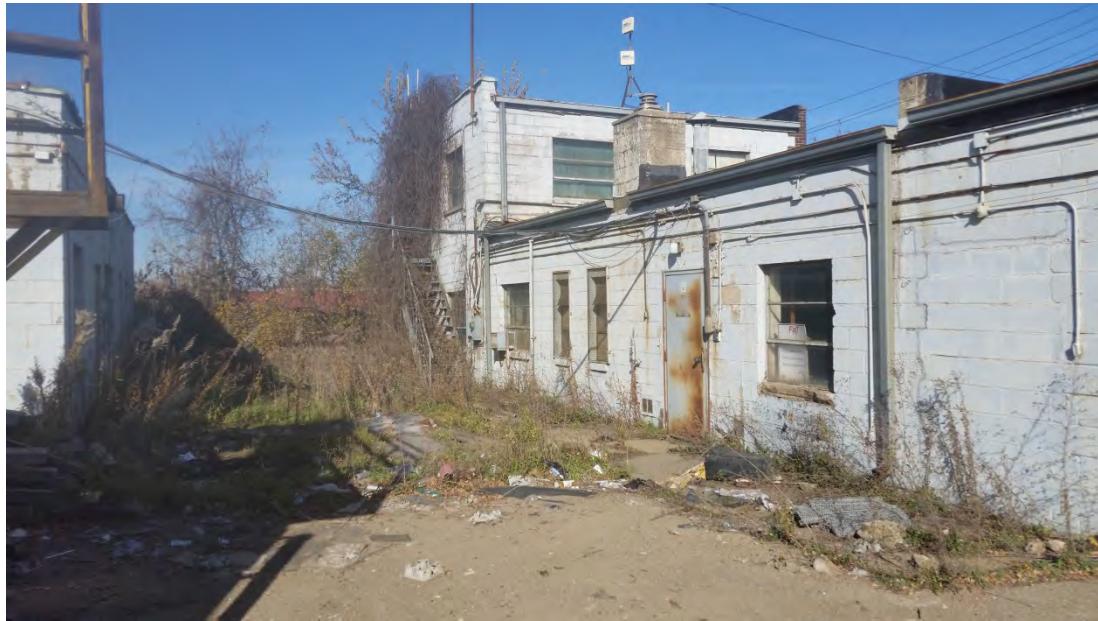


Photo 2 – Ferrous Processing and Trading Building

November 22, 2016



Site Photographs

Attachment 4 Soil Boring Logs

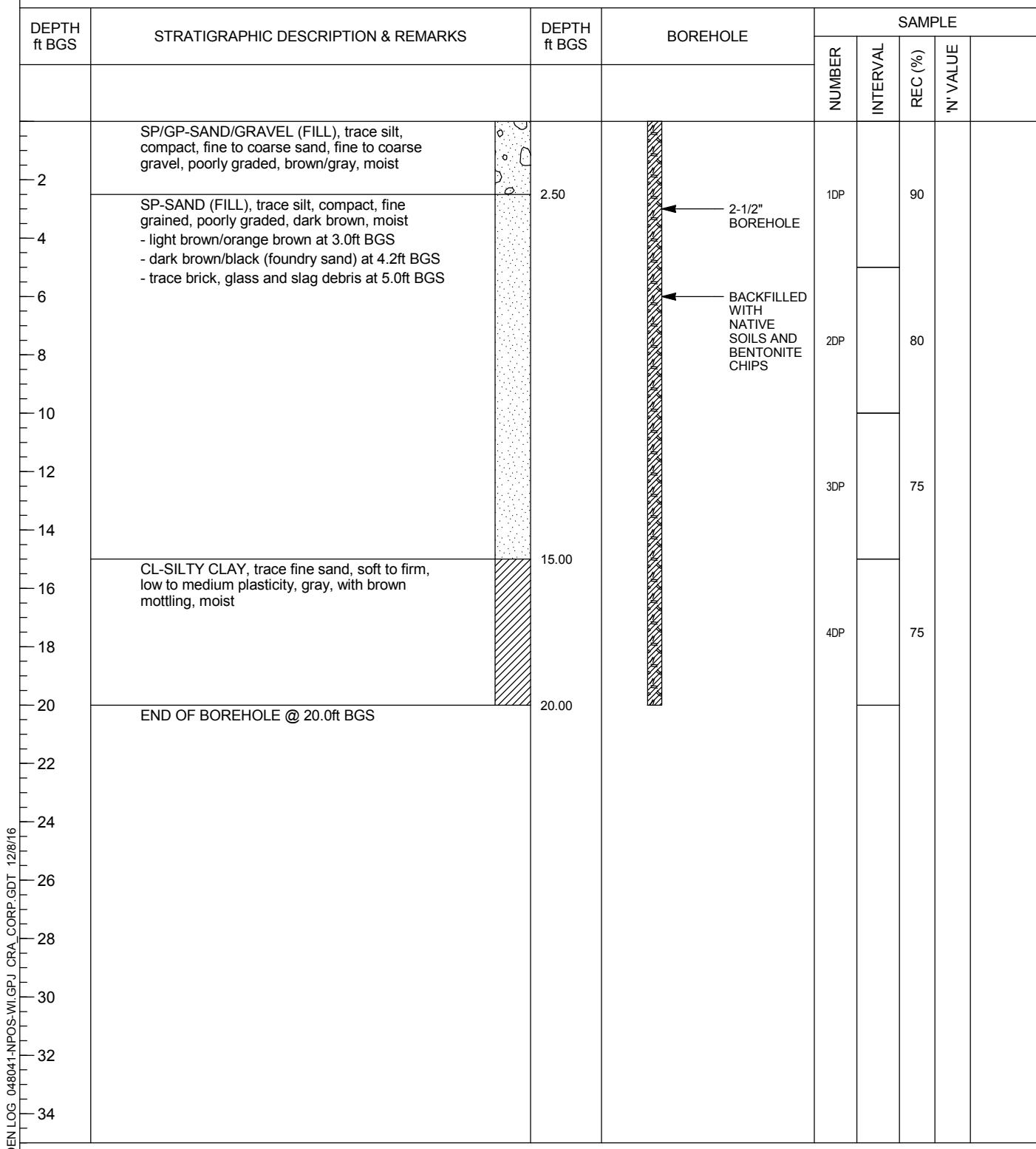


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: NPOS RESPONDENTS
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: 46
DATE COMPLETED: December 2, 2016
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. RIVERS



OVERBURDEN LOG 048041-NPOS-WL.GPJ CRA CORP GDT 12/8/16

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: NPOS RESPONDENTS
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: 47
DATE COMPLETED: December 1, 2016
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND/GRAVEL (FILL), trace silt, dense, fine to coarse sand, fine to coarse gravel, poorly graded, light gray/dark brown, moist - concrete and brick debris at 2.5ft BGS	3.50	2-1/2" BOREHOLE	1DP		100	
4	SM/ML-SAND/SILT (FILL), compact, fine grained, poorly graded, yellowish brown, brown and gray, moist	5.50	BACKFILLED WITH NATIVE SOILS AND BENTONITE CHIPS	2DP		100	
6	SP-SAND (FILL), trace silt and fine gravel, trace slag debris, compact, fine to coarse grained, poorly graded, dark brown to black, moist	11.00		3DP		25	
8	NO RECOVERY (11.0 to 15.0ft BGS), loose fill, wet	15.00					
10	END OF BOREHOLE @ 15.0ft BGS						
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: NPOS RESPONDENTS
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: 48
DATE COMPLETED: December 1, 2016
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SC-CLAYEY SAND (FILL), red brick debris, compact, fine to coarse grained, poorly graded, brown, moist	2.00		1DP		80	
4	SP-SAND (FILL), with silt, compact, fine grained, poorly graded, light brown, moist - slag debris, fine to coarse grained, gray/black at 3.5ft BGS	4.50					
6	CL-SILTY CLAY (FILL), trace fine sand, firm, low plasticity, brown, with rust brown mottling, moist	6.50					
8	SC/SM-SAND (FILL), with silt and clay, loose, fine grained, poorly graded, black, wet	7.50		2DP		80	
10	CL-SILTY CLAY (FILL), trace fine sand, trace fine sand seams, firm, low plasticity, brownish gray, greenish gray and brown, moist						
12	- trace red brick debris at 11.0ft BGS - brown, orange brown and gray at 11.5ft BGS	12.50					
14	CL-SILTY CLAY, trace fine sand, soft to firm, low plasticity, gray, moist	15.00		3DP		75	
16	END OF BOREHOLE @ 15.0ft BGS						
18							
20							
22							
24							
26							
28							
30							
32							
34							



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: NPOS RESPONDENTS
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: 53
DATE COMPLETED: December 1, 2016
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
2	SP/GP-SAND/GRAVEL (FILL), trace silt, dense, fine to coarse sand, fine to coarse gravel, poorly graded, brown, moist - trace brick debris at 1.0ft BGS - trace slag and brick debris, dark brown/black at 2.0ft BGS	8.00	2-1/2" BOREHOLE	1DP		100	
4	- 1' sand to gravel size concrete debris, white, moist at 3.5ft BGS - brown at 4.5ft BGS			2DP		90	
6	- dark brown/black at 5.5ft BGS - moist to wet at 6.5ft BGS			3DP		80	
8	CL-SILTY CLAY, trace fine sand and fine gravel, firm, low plasticity, gray, trace yellowish brown mottling, moist - gray and yellow brown mottled at 10.0ft BGS	15.00	BACKFILLED WITH NATIVE SOILS AND BENTONITE CHIPS				
10							
12	- soft, low to medium plasticity at 13.0ft BGS						
14							
16	END OF BOREHOLE @ 15.0ft BGS						
18							
20							
22							
24							
26							
28							
30							
32							
34							

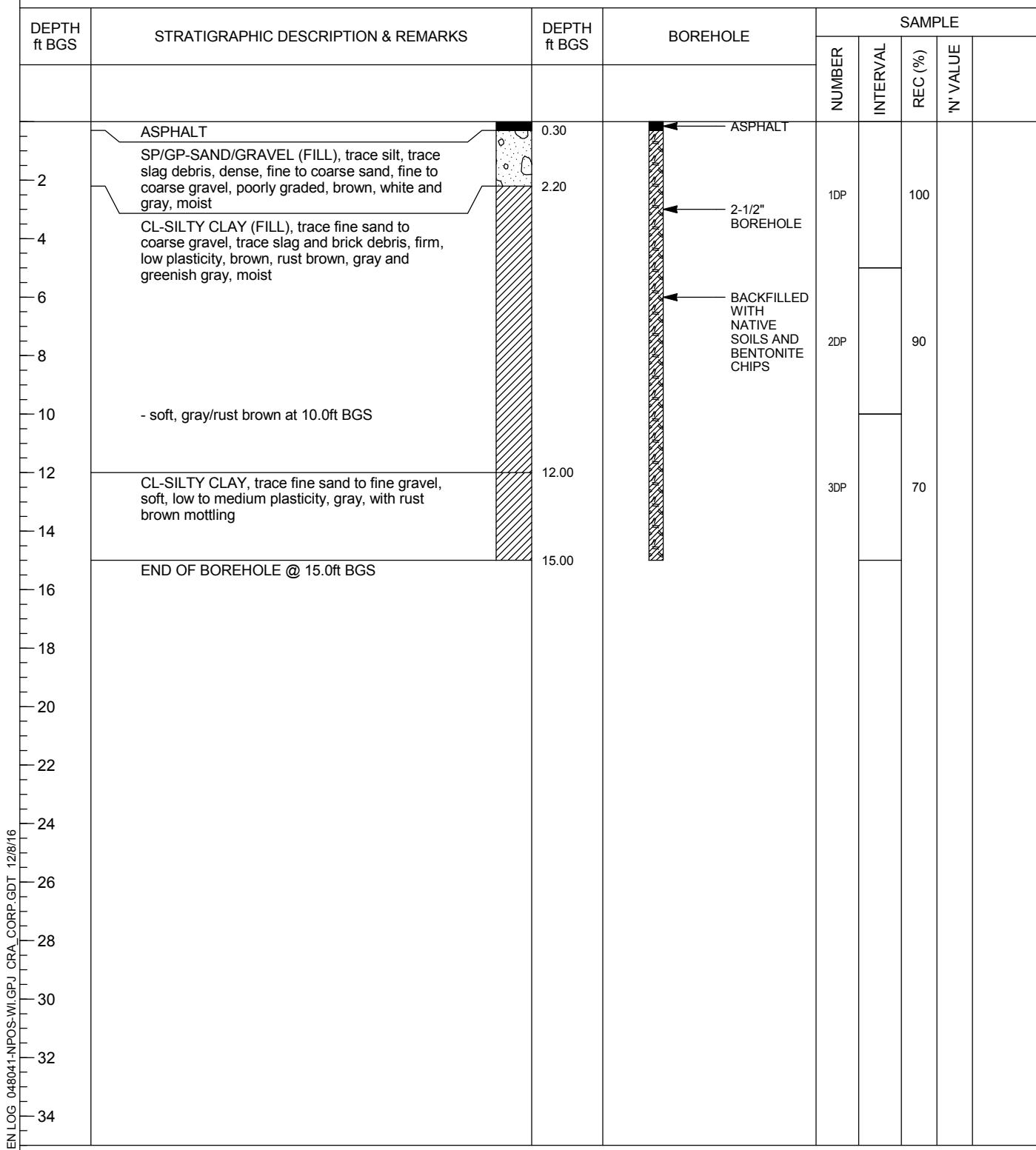


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DEARBORN REFINERY SITE
PROJECT NUMBER: 048041
CLIENT: NPOS RESPONDENTS
LOCATION: DEARBORN, MICHIGAN

HOLE DESIGNATION: 59
DATE COMPLETED: December 2, 2016
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. RIVERS

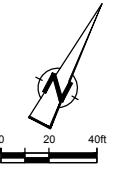
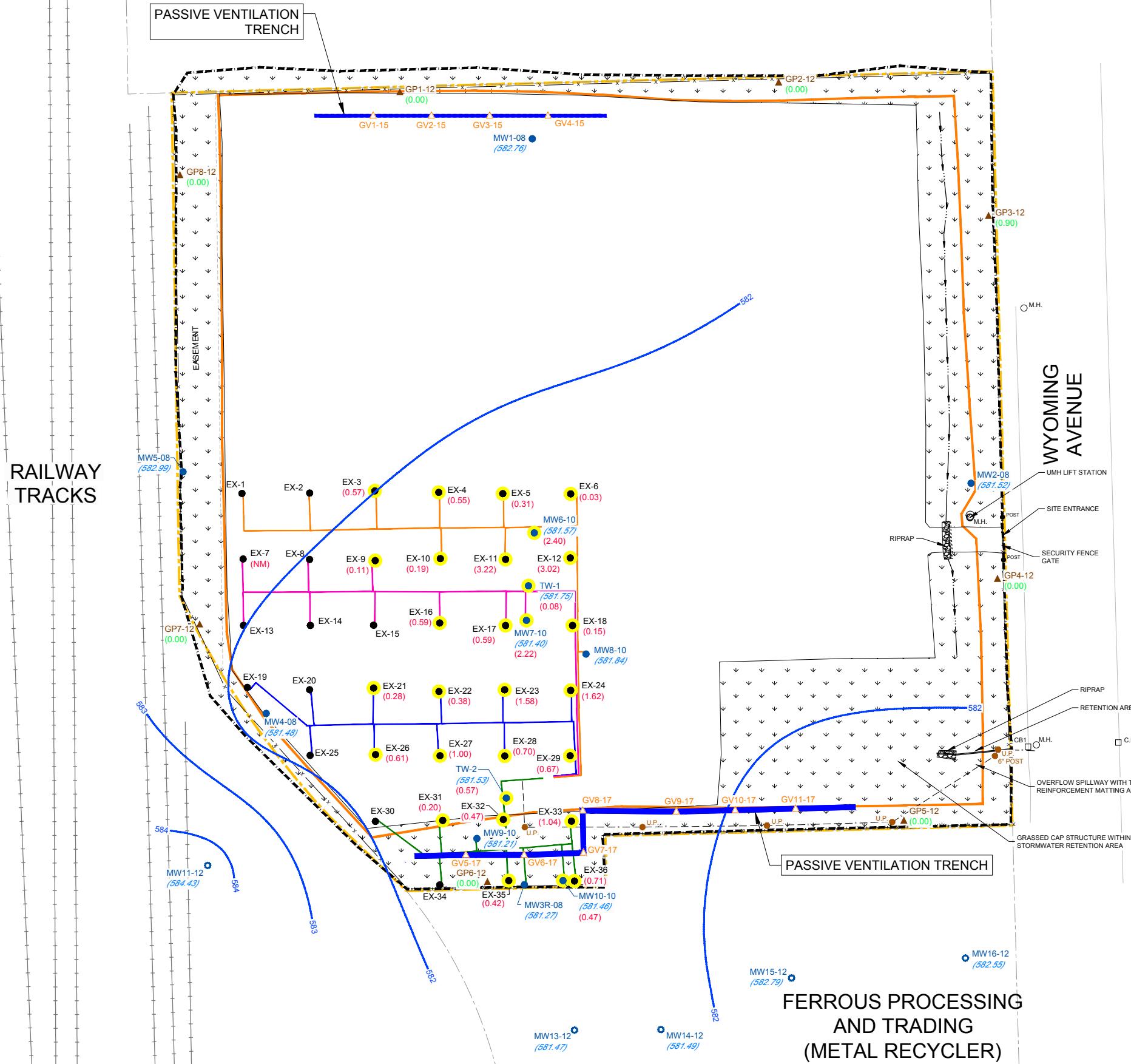


OVERBURDEN LOG 048041-NPOS-WL.GPJ CRA CORP GDT 12/8/16

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Attachment 2

LIBERTY TRUCK SERVICES (TRUCK REPAIR)



LEGEND

- PROPERTY BOUNDARY
- LEGAL BOUNDARY
- RAILWAY LINE
- C.B. □ CATCH BASIN
- U.M.H. LIFT STATION
- GRASSED AREA
- CAP LIMIT
- SWALE
- FENCELINE
- 40 MIL HDPE LINER LIMIT (LINER ANCHOR TRENCH LOCATION)
- OVERHEAD POWER LINE
- STORM CULVERT
- GROUNDWATER MONITORING WELL LOCATION
- TEST RECOVERY WELL LOCATION
- EXTRACTION WELL LOCATION
- LNAPL SENTRY WELL LOCATION
- GAS PROBE
- GAS VENT
- C.B. □ CATCH BASIN
- M.H. ○ MANHOLE
- UTILITY POLE
- LINE 1
- LINE 2
- LINE 3
- LINE 4
- GROUNDWATER CONTOUR (ft AMSL)
- GROUNDWATER ELEVATION (ft AMSL)
- ft AMSL
- LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL)
- THICKNESS OR SHEEN OBSERVED IN SPECIFIED WELL
- (0.15)
- (0.90)
- LNAPL THICKNESS OBSERVED IN SPECIFIED WELL (FEET)
- PRESSURE MEASUREMENT IN INCHES OF WATER COLUMN (H_2O) (MEASUREMENTS COLLECTED USING A DIGITAL MANOMETER)

SOURCES

- SITE LAYOUT MAP WESTON 1112 (2006)
- FG SURVEY, CONESTOGA ROVERS & ASSOCIATES, INC., 04/16/2006 AND SURVEY MAY 02, 2011
- EG SURVEY JULY 30, 2012 CONESTOGA ROVERS & ASSOCIATES (CRA) SURVEY DECEMBER 17, 2014, DATUM: SPCS MI NAD83, INTFT: MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) - CONTINUOUSLY OPERATING REFERENCE STATION (CORS) NETWORK.

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

**FORMER DEARBORN REFINING SITE
DEARBORN, MICHIGAN**

JULY, AUGUST, AND SEPTEMBER QUARTERLY PROGRESS REPORT

SEPTEMBER 13, 2017 WATER LEVELS
AND LNAPL OBSERVATIONS



Source Reference:

Project Manager: G. TURCHAN	Reviewed By: M. BARRERA	Date: October 2017
Scale: AS SHOWN	Project No: 48041-00	Report No: PRES061

Table 2

LNAPL Thickness (Feet) Observations
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Well ID	EX-1	EX-2	EX-3	EX-4	EX-5	EX-6	EX-7	EX-8	EX-9	EX-10	EX-11	EX-12	EX-13	EX-14	EX-15	EX-16	EX-17	EX-18	EX-19	EX-20	EX-21	EX-22	EX-23	EX-24	EX-25	EX-26	
April 24, 2013	--	--	0.03	--	--	--	--	0.02	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	0.01	--	0.01		
May 23, 2013	--	--	0.17	--	0.04	--	--	--	0.24	--	0.31	0.78	--	--	--	0.09	--	--	--	--	0.16	0.36	0.03	1.52	--	0.50	
June 20, 2013	--	--	0.12	--	trace	--	--	--	0.19	--	0.34	0.38	--	--	--	0.08	--	--	--	--	0.15	0.64	0.03	1.90	--	0.44	
July 25, 2013	--	--	0.15	trace	trace	--	--	--	--	0.57	--	--	--	--	--	0.15	trace	--	--	--	0.06	--	--	--	--	0.42	
August 29, 2013	--	--	0.13	0.06	3.99	--	--	--	0.59	--	--	--	--	--	--	0.03	0.10	0.03	--	--	0.38	--	0.50	0.48	--	0.46	
September 27, 2013	--	--	0.23	0.17	--	--	--	--	0.39	0.16	0.13	1.60	--	--	--	0.22	0.14	--	--	--	0.11	0.08	0.30	0.69	--	0.52	
October 22, 2013	--	--	0.24	0.23	0.52	--	--	--	0.50	0.22	0.34	1.97	--	--	--	0.28	0.14	--	--	--	0.19	0.08	0.50	1.07	--	0.65	
November 21, 2013	--	--	0.19	0.10	0.00	--	--	--	0.10	0.12	--	0.02	--	--	--	0.05	0.01	--	--	--	0.03	0.20	0.09	2.35	--	0.19	
December 11, 2013	--	--	0.03	--	--	--	--	--	0.01	--	0.01	--	--	--	--	--	trace	--	--	--	trace	0.11	0.02	1.02	--	0.64	
January 15, 2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	trace	--	--	--	--	0.03	0.01	0.38	--	--	--	
February 26, 2014	--	--	--	0.02	--	--	--	--	--	--	0.51	--	--	--	--	--	--	--	--	--	0.01	0.05	0.13	--	trace	--	
March 25, 2014	--	--	--	--	--	--	--	--	--	--	0.50	--	--	--	--	--	--	--	--	--	--	0.03	0.42	--	--	--	--
May 5, 2014	--	--	trace	trace	0.01	--	--	--	0.01	--	trace	0.35	--	--	--	0.02	--	--	--	--	--	0.09	0.01	0.97	--	trace	--
September 19, 2014	--	--	0.06	trace	0.01	--	--	--	0.02	0.02	trace	0.26	--	--	--	0.42	trace	--	--	--	--	0.01	1.75	0.02	2.34	--	0.86
December 11, 2014	--	--	0.28	0.04	trace	--	--	--	0.06	0.16	0.67	2.57	--	--	--	0.63	--	--	--	--	0.15	0.46	0.46	1.10	--	0.53	
March 9, 2015	--	--	0.39	0.30	0.04	--	--	--	0.20	0.28	1.30	1.90	--	--	--	0.42	--	--	--	--	0.15	0.37	0.56	0.96	--	0.68	
June 1, 2015	--	--	0.02	0.02	trace	--	--	--	0.02	trace	1.23	2.20	--	--	--	0.34	--	--	--	--	0.07	0.09	0.32	0.97	--	0.03	
August 5, 2015	--	--	trace	0.07	trace	0.02	--	--	0.02	0.12	1.75	2.56	--	--	--	0.84	--	--	--	--	0.02	trace	0.01	1.40	--	0.59	
January 8, 2016	--	--	trace	0.22	trace	0.11	--	--	0.07	0.01	1.83	1.44	--	--	--	0.22	--	--	--	--	0.13	trace	0.30	1.11	--	0.25	
March 18, 2016	--	--	0.21	0.13	0.01	0.12	--	--	0.13	--	1.75	0.08	--	--	--	0.26	trace	--	--	--	0.04	0.11	0.13	1.61	--	0.38	
May 26, 2016	--	--	0.23	0.15	0.01	0.07	--	--	0.11	0.01	2.17	0.62	--	--	--	0.18	0.01	--	--	--	0.09	0.19	0.14	1.96	--	0.74	
August 12, 2016	--	--	0.30	0.15	0.10	0.07	--	--	0.18	0.25	3.28	1.26	--	--	--	0.57	trace	--	--	--	trace	0.46	1.11	1.36	--	0.95	
December 9, 2016	--	--	trace	0.19	0.13	0.01	--	--	0.14	0.01	2.57	1.32	--	--	--	0.44	trace	trace	--	--	0.25	0.75	0.43	1.47	--	0.67	
February 27, 2017	--	--	0.59	0.17	0.06	0.05	--	--	0.09	--	2.43	1.06	--	--	--	0.55	0.01	trace	--	--	0.08	0.58	0.38	1.89	--	0.10	
June 19, 2017	--	--	0.63	0.18	0.07	0.01	--	--	0.31	0.07	3.36	1.75	--	--	--	0.37	0.01	0.15	--	--	0.13	0.81	0.43	1.82	--	1.11	
September 13, 2017	--	--	0.57	0.55	0.31	0.03	NM	--	0.11	0.19	3.22	3.02	--	--	--	0.59	0.59	0.15	--	--	0.28	0.38	1.58	1.62	--	0.61	

Notes:

LNAPL Light Non-Aqueous Phase Liquid.

-- LNAPL not present.

trace Trace LNAPL present on oil/water interface probe.

(1) Well damaged just below ground surface.
Unable to collect levels.

(2) Unable to measure level - area flooded.

NM Not measured

Table 2

LNAPL Thickness (Feet) Observations
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Well ID	EX-27	EX-28	EX-29	EX-30	EX-31	EX-32	EX-33	EX-34	EX-35	EX-36	MW1-08	MW2-08	MW3R-08	MW4-08	MW5-08	MW6-10	MW7-10	MW8-10	MW9-10	MW10-10	MW11-12	MW13-12	MW14-12
April 24, 2013	--	--	0.29	--	0.01	0.13	--	--	--	--	trace	--	--	3.22	2.17	--	--	0.07	--	--	--	--	--
May 23, 2013	--	--	--	--	0.03	--	--	--	--	--	trace	--	--	3.37	1.56	--	--	0.94	--	--	--	--	--
June 20, 2013	trace	0.06	0.09	--	--	--	0.12	--	--	trace	--	--	--	--	3.64	2.16	--	--	0.41	--	--	--	--
July 25, 2013	--	0.17	0.03	--	trace	--	trace	--	--	0.01	--	--	trace	trace	--	trace	trace	--	--	0.62	--	--	--
August 29, 2013	--	trace	0.46	--	0.07	10.85	0.64	--	0.64	0.73	--	--	trace	--	--	trace	trace	--	--	1.04	--	--	--
September 27, 2013	0.31	0.12	0.62	--	0.17	--	--	--	trace	0.01	--	--	--	--	1.72	0.41	--	--	0.05	--	--	--	
October 22, 2013	0.66	0.11	1.01	--	0.25	--	--	--	--	--	trace	--	--	1.87	0.38	--	--	trace	--	--	--	--	--
November 21, 2013	0.04	0.16	0.22	--	0.03	0.14	0.01	--	0.08	0.36	--	--	trace	--	--	0.40	trace	--	--	0.57	--	--	--
December 11, 2013	--	0.12	0.03	--	trace	0.12	--	--	0.02	0.17	--	--	trace	--	--	0.01	trace	--	--	0.47	--	--	--
January 15, 2014	--	0.11	0.02	--	--	0.01	--	--	trace	0.28	--	--	--	--	trace	0.15	--	--	0.35	--	--	--	
February 26, 2014	0.07	0.11	0.06	--	--	0.05	--	--	0.01	0.02	--	--	--	--	--	0.07	0.03	--	--	--	--	--	--
March 25, 2014	--	--	trace	--	--	0.03	--	--	0.02	0.02	--	--	--	--	--	0.33	0.42	--	--	--	--	--	--
May 5, 2014	--	0.01	0.05	trace	0.04	--	--	--	0.06	0.04	--	(1)	--	--	--	2.13	1	--	--	--	--	--	--
September 19, 2014	0.01	0.22	trace	--	--	trace	trace	--	0.07	0.63	--	--	--	--	--	3.65	3.21	--	--	0.09	--	--	--
December 11, 2014	0.08	0.37	0.15	--	--	0.37	0.01	--	0.12	0.43	--	--	trace	--	--	2.73	1.98	--	--	0.12	--	--	--
March 9, 2015	0.20	0.22	0.27	--	0.12	0.23	trace	--	0.41	0.46	--	--	--	--	--	2.01	1.35	--	--	0.55	(2)	--	(2)
June 1, 2015	--	0.03	0.16	--	--	0.09	--	--	0.31	0.52	--	--	--	--	--	2.72	1.62	--	--	0.09	--	--	--
August 5, 2015	0.02	0.20	0.33	--	--	0.06	trace	--	0.29	0.71	--	--	--	--	--	3.11	2.03	--	--	0.47	--	--	--
January 8, 2016	0.17	0.05	0.31	--	0.07	0.16	trace	--	0.32	0.52	--	--	--	--	--	2.57	1.35	--	--	trace	--	--	--
March 18, 2016	--	0.01	0.31	--	0.04	0.35	0.01	--	0.45	0.5	--	--	--	--	--	3.27	1.94	--	--	--	--	--	--
May 26, 2016	0.31	0.02	0.36	--	0.01	0.46	0.22	--	0.02	0.52	--	--	--	--	--	4	3.14	--	--	0.1	--	--	--
August 12, 2016	0.54	trace	0.35	--	0.01	0.01	0.28	--	0.63	0.1	--	--	--	--	--	2.76	1.24	--	--	0.83	--	--	--
December 9, 2016	0.42	0.07	0.58	--	trace	0.61	0.14	--	0.32	0.77	--	--	--	--	--	1.46	3.05	--	--	0.28	--	--	--
February 27, 2017	0.31	0.20	0.43	--	trace	0.61	trace	--	0.32	0.77	--	--	--	--	--	3.45	2.52	--	--	0.13	--	--	--
June 19, 2017	0.70	0.17	0.54	--	trace	0.48	1.24	--	0.32	0.77	--	--	--	--	--	5.13	3.13	--	--	0.69	--	--	--
September 13, 2017	1.00	0.70	0.67	--	0.2	0.47	1.04	--	0.42	0.71	--	--	--	--	--	2.4	2.22	--	--	0.47	--	--	--

Notes:

LNAPL Light Non-Aqueous Phase Liquid.

-- LNAPL not present.

trace Trace LNAPL present on oil/water interface probe.

(1) Well damaged just below ground surface.
Unable to collect levels.

(2) Unable to measure level - area flooded.

NM Not measured

Table 2

LNAPL Thickness (Feet) Observations
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Well ID	MW15-12	MW16-12	TW-1	TW-2
April 24, 2013	--	--	--	0.49
May 23, 2013	--	--	trace	0.29
June 20, 2013	--	--	trace	0.45
July 25, 2013	--	--	0.04	trace
August 29, 2013	--	--	--	--
September 27, 2013	--	--	0.03	0.04
October 22, 2013	--	--	0.05	0.06
November 21, 2013	--	--	--	trace
December 11, 2013	--	--	trace	0.09
January 15, 2014	--	--	trace	0.05
February 26, 2014	--	--	trace	0.01
March 25, 2014	--	--	trace	0.01
May 5, 2014	--	--	trace	0.21
September 19, 2014	--	--	trace	0.83
December 11, 2014	--	--	trace	0.61
March 9, 2015	(2)	(2)	0.01	0.47
June 1, 2015	--	--	0.01	0.24
August 5, 2015	--	--	0.01	0.31
January 8, 2016	--	--	0.01	trace
March 18, 2016	--	--	0.01	0.02
May 26, 2016	--	--	0.02	0.03
August 12, 2016	--	--	trace	0.42
December 9, 2016	--	--	trace	0.01
February 27, 2017	--	--	0.03	0.18
June 19, 2017	--	--	0.05	0.18
September 13, 2017	--	--	0.08	0.57

Notes:

LNAPL Light Non-Aqueous Phase Liquid.

-- LNAPL not present.

trace Trace LNAPL present on oil/water interface probe.

(1) Well damaged just below ground surface.
Unable to collect levels.

(2) Unable to measure level - area flooded.

NM Not measured

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	MDEQ MSSLs ⁽¹⁾						EX-11 GE-48041-081216-DC-006	EX-24 GE-48041-080615-CB-004	GP1-12 GE-48041-050514-CB-001	GP1-12 GE-48041-080615-CB-001	GP1-12 GE-48041-081216-DC-001	GP1-12 GE-48041-091417-DC-001	
	Soil Vapor (Including Subslab)												
Sample Identification:	Residential	Residential	NonResidential	NonResidential	NonResidential	TSRIASL	8/12/2016	8/6/2015	5/5/2014	8/6/2015	8/12/2016	9/14/2017	
Sample Date:	Residential	Residential	NonResidential	NonResidential	NonResidential	TSRIASL	8/12/2016	8/6/2015	5/5/2014	8/6/2015	8/12/2016	9/14/2017	
Sample Type:	Units	a	b	c	d	e	TSRIASL	TSRIASL	TSRIASL	TSRIASL	TSRIASL	TSRIASL	
Volatile Organic Compounds (VOCs)													
1,1,1-Trichloroethane	µg/m³	170000	170000	230000	230000	230000	ND(110)	ND(40)	ND(8.2)	ND(40)	5.5 J	4.4 J	
1,1,2,2-Tetrachloroethane	µg/m³	--	--	--	--	--	ND(190)	ND(67)	ND(14)	ND(66)	ND(14)	ND(14)	
1,1,2-Trichloroethane	µg/m³	--	--	--	--	--	ND(150)	ND(53)	ND(11)	ND(53)	ND(11)	ND(11)	
1,1-Dichloroethane	µg/m³	530	5300	1200	2500	25000	34 J	420 J	ND(6.1)	8.7 J	3.2 J	ND(6.1)	
1,1-Dichloroethene	µg/m³	7000	21000	10000	20000	61000	ND(220)	ND(77)	ND(16)	ND(77)	ND(16)	ND(16)	
1,2,4-Trichlorobenzene	µg/m³	70	210	100	200	610	ND(1000)	ND(360)	ND(74)	ND(360)	ND(74)	ND(74)	
1,2,4-Trimethylbenzene	µg/m³	2100	6300	3100	6100	18000	ND(270)	41 J	ND(20)	20 J	ND(20)	ND(20)	
1,2-Dibromoethane (Ethylene dibromide)	µg/m³	--	--	--	--	--	ND(420)	ND(150)	ND(31)	ND(150)	ND(31)	ND(31)	
1,2-Dichlorobenzene	µg/m³	--	--	--	--	--	ND(160)	ND(59)	ND(12)	ND(58)	ND(12)	ND(12)	
1,2-Dichloroethane	µg/m³	--	--	--	--	--	ND(220)	ND(79)	ND(16)	40 J	ND(16)	ND(16)	
1,2-Dichloropropane	µg/m³	--	--	--	--	--	ND(130)	ND(45)	ND(9.2)	ND(45)	ND(9.2)	ND(9.2)	
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m³	--	--	--	--	--	ND(190)	ND(68)	ND(14)	ND(68)	ND(14)	ND(14)	
1,3,5-Trimethylbenzene	µg/m³	2100	6300	3100	6100	18000	ND(130)	22 J	ND(9.8)	ND(48)	ND(9.8)	ND(9.8)	
1,3-Dichlorobenzene	µg/m³	100	310	150	310	920	ND(160)	ND(59)	ND(12)	ND(58)	ND(12)	ND(12)	
1,4-Dichlorobenzene	µg/m³	220	2200	510	1000	10000	ND(160)	35 J	ND(12)	ND(58)	ND(12)	ND(12)	
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m³	--	--	--	--	--	6300	890 J	ND(12)	ND(57)	ND(12)	ND(12)	
2-Hexanone	µg/m³	--	--	--	--	--	ND(110)	ND(40)	ND(8.2)	ND(40)	ND(8.2)	ND(8.2)	
4-Ethyl toluene	µg/m³	--	--	--	--	--	ND(130)	67 J	ND(9.8)	ND(48)	ND(9.8)	ND(9.8)	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MI)	µg/m³	--	--	--	--	--	ND(110)	ND(40)	ND(8.2)	ND(40)	ND(8.2)	ND(8.2)	
Acetone	µg/m³	1000000	1000000	1000000	1000000	1000000	1400	980 J	57	90 J	17 J	6.9 J	
Benzene	µg/m³	110	630	260	510	1800	ND(88)	730 J^{abcd}	ND(6.4)	120^a	ND(6.4)	ND(6.4)	
Benzyl chloride	µg/m³	--	--	--	--	--	ND(280)	ND(100)	ND(21)	ND(100)	ND(21)	ND(21)	
Bromodichloromethane	µg/m³	--	--	--	--	--	ND(140)	ND(49)	ND(10)	ND(49)	ND(10)	ND(10)	
Bromoform	µg/m³	--	--	--	--	--	ND(280)	ND(100)	ND(21)	ND(100)	ND(21)	ND(21)	
Bromomethane (Methyl bromide)	µg/m³	--	--	--	--	--	ND(210)	ND(76)	ND(16)	ND(75)	ND(16)	ND(16)	
Carbon disulfide	µg/m³	--	--	--	--	--	42 J	ND(61)	ND(12)	ND(60)	ND(12)	ND(12)	
Carbon tetrachloride	µg/m³	--	--	--	--	--	ND(340)	ND(120)	ND(25)	ND(120)	ND(25)	ND(25)	
Chlorobenzene	µg/m³	1700	5200	2600	5100	15000	ND(95)	ND(34)	ND(6.9)	ND(33)	ND(6.9)	ND(6.9)	
Chloroethane	µg/m³	140000	420000	200000	410000	1200000	ND(140)	270 J	ND(11)	ND(51)	ND(11)	ND(11)	
Chloroform (Trichloromethane)	µg/m³	37	370	87	170	1700	ND(100)	ND(36)	ND(7.3)	ND(35)	4.6 J	9.5	
Chloromethane (Methyl chloride)	µg/m³	3100	9400	4600	9200	14000	ND(110)	ND(40)	ND(8.3)	ND(40)	ND(8.3)	ND(8.3)	
cis-1,2-Dichloroethene	µg/m³	280	830	410	820	2500	ND(110)	31 J	ND(7.9)	ND(38)	ND(7.9)	ND(7.9)	
cis-1,3-Dichloropropene	µg/m³	--	--	--	--	--	ND(120)	ND(44)	ND(9.1)	ND(44)	ND(9.1)	ND(9.1)	
Dibromochloromethane	µg/m³	--	--	--	--	--	ND(230)	ND(83)	ND(17)	ND(82)	ND(17)	ND(17)	
Dichlorodifluoromethane (CFC-12)	µg/m³	--	--	--	--	--	ND(140)	ND(48)	5.8 J	ND(48)	ND(9.9)	3.8 J	
Ethylbenzene	µg/m³	340	3400	800	1600	16000	ND(120)	170 J	ND(8.7)	ND(42)	ND(8.7)	ND(8.7)	
Hexachlorobutadiene	µg/m³	--	--	--	--	--	ND(1500)	ND(520)	ND(110)	ND(520)	ND(110)	ND(110)	
m&p-Xylenes	µg/m³	--	--	--	--	--	ND(240)	220 J	ND(17)	ND(84)U	5.1 J	ND(17)	
Methylene chloride	µg/m³	21000	33000	31000	61000	97000	ND(95)	ND(34)	ND(6.9)	ND(34)	ND(6.9)	ND(6.9)	
o-Xylene	µg/m³	--	--	--	--	--	ND(120)	160 J	ND(8.7)	ND(42)U	ND(8.7)	ND(8.7)	
Tetrachloroethene	µg/m³	1400	1400	1400	2700	2700	ND(190)	ND(66)	4.8 J	31 J	31	37	
Toluene	µg/m³	170000	250000	250000	250000	250000	ND(100)	ND(37)	2.0 J	9.6 J	2.9 J	ND(7.5)	
trans-1,2-Dichloroethene	µg/m³	9000	26000	26000	26000	26000	ND(110)	12 J	ND(7.9)	ND(38)	ND(7.9)	ND(7.9)	
trans-1,3-Dichloropropene	µg/m³	--	--	--	--	--	ND(120)	ND(44)	ND(9.1)	ND(44)	ND(9.1)	ND(9.1)	
Trichloroethene	µg/m³	67	200	67	130	400	ND(150)	ND(52)	2.9 J	20 J	22	22	

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location: Sample Identification: Sample Date: Sample Type:	MDEQ MSSLs ⁽¹⁾					EX-11 GE-48041-081216-DC-006	EX-24 GE-48041-080615-CB-004	GP1-12 GE-48041-050514-CB-001	GP1-12 GE-48041-080615-CB-001	GP1-12 GE-48041-081216-DC-001	GP1-12 GE-48041-091417-DC-001						
	Soil Vapor (Including Subslab)																
	Residential	Residential	NonResidential	NonResidential	NonResidential												
RIASL	TSRIASL	RIASL	RIASL ₁₂	TSRIASL ₁₂	TSRIASL ₁₂	8/12/2016	8/6/2015	5/5/2014	8/6/2015	8/12/2016	9/14/2017						
Units	a	b	c	d	e												
Trichlorofluoromethane (CFC-11)	µg/m ³	--	--	--	--	ND(150)	ND(55)	ND(11)	ND(54)	16	17						
Trifluorotrichloroethane (CFC-113)	µg/m ³	--	--	--	--	ND(210)	ND(75)	ND(15)	ND(74)	ND(15)	ND(15)						
Vinyl acetate	µg/m ³	7000	21000	10000	20000	61000	ND(190)	ND(69)	ND(14)	ND(68)	ND(14)						
Vinyl chloride	µg/m ³	54	540	450	910	9100	ND(70)	89 J ^a	ND(5.1)	ND(25)	ND(5.1)						

Footnotes:

ND() - Not detected at the associated reporting limit.

U - Not detected at the associated reporting limit.

J - Estimated concentration.

(1) MDEQ Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSLs), August 2017

RIASL - Recommended Interim Action Screening Levels

RIASL₁₂ - Recommended Interim Action Screening Levels for exposures less than 12 hoursTSRIASL₁₂ - Time Sensitive Recommended Interim Action Screening Levels

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP1-12	GP3-12	GP3-12	GP3-12	GP3-12	GP3-12	GP4-12	GP5-12	GP5-12
Sample Identification:	GE-48041-091417-DC-002	GE-48041-050614-CB-004	GE-48041-050614-CB-005	GE-48041-080615-CB-002	GE-48041-081216-DC-002	GE-48041-091417-DC-003	GE-48041-091417-DC-004	GE-48041-050614-CB-003	GE-48041-080615-CB-003
Sample Date:	9/14/2017	5/6/2014	5/6/2014	8/6/2015	8/12/2016	9/14/2017	9/14/2017	5/6/2014	8/6/2015
Sample Type:	Duplicate		Duplicate						
Units									
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	µg/m³	4.0 J	ND(8.2)	ND(8.2)	ND(41)	ND(35)	ND(16)	ND(8.2)	ND(8.2)
1,1,2,2-Tetrachloroethane	µg/m³	ND(14)	ND(14)	ND(14)	ND(69)	ND(59)	ND(27)	ND(14)	ND(14)
1,1,2-Trichloroethane	µg/m³	ND(11)	ND(11)	ND(11)	ND(55)	ND(47)	ND(21)	ND(11)	ND(11)
1,1-Dichloroethane	µg/m³	ND(6.1)	ND(6.1)	ND(6.1)	ND(30)	ND(26)	ND(12)	ND(6.1)	2.0 J
1,1-Dichloroethene	µg/m³	ND(16)	ND(16)	ND(16)	ND(79)	ND(69)	ND(31)	ND(16)	ND(16)
1,2,4-Trichlorobenzene	µg/m³	ND(74)	ND(74)	ND(74)	ND(370)	ND(320)	ND(140)	ND(74)	ND(74)
1,2,4-Trimethylbenzene	µg/m³	ND(20)	ND(20)	ND(20)	29 J	ND(85)	ND(38)	ND(20)	24
1,2-Dibromoethane (Ethylene dibromide)	µg/m³	ND(31)	ND(31)	ND(31)	ND(150)	ND(130)	ND(60)	ND(31)	ND(31)
1,2-Dichlorobenzene	µg/m³	ND(12)	ND(12)	ND(12)	ND(60)	ND(52)	ND(23)	ND(12)	ND(12)
1,2-Dichloroethane	µg/m³	ND(16)	ND(16)	ND(16)	ND(81)	ND(70)	ND(32)	ND(16)	ND(16)
1,2-Dichloropropane	µg/m³	ND(9.2)	ND(9.2)	ND(9.2)	ND(46)	ND(40)	ND(18)	ND(9.2)	ND(9.2)
1,2-Dichlortetrafluoroethane (CFC 114)	µg/m³	ND(14)	ND(14)	ND(14)	ND(70)	ND(60)	ND(27)	ND(14)	ND(14)
1,3,5-Trimethylbenzene	µg/m³	ND(9.8)	ND(9.8)	ND(9.8)	ND(49)	ND(42)	ND(19)	ND(9.8)	ND(9.8)
1,3-Dichlorobenzene	µg/m³	ND(12)	ND(12)	ND(12)	ND(60)	ND(52)	ND(23)	ND(12)	ND(12)
1,4-Dichlorobenzene	µg/m³	ND(12)	ND(12)	14	29 J	ND(52)	ND(23)	ND(12)	28
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m³	ND(12)	ND(12)	ND(12)	23 J	69	68	ND(12)	10 J
2-Hexanone	µg/m³	ND(8.2)	ND(8.2)	ND(8.2)	ND(41)	ND(35)	ND(16)	ND(8.2)	ND(8.2)
4-Ethyl toluene	µg/m³	ND(9.8)	ND(9.8)	ND(9.8)	ND(49)	ND(42)	ND(19)	ND(9.8)	ND(9.8)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MI)	µg/m³	ND(8.2)	ND(8.2)	ND(8.2)	150	35	5.7 J	ND(8.2)	ND(8.2)
Acetone	µg/m³	8.5 J	190	160	1000	1000	760	21 J	150
Benzene	µg/m³	ND(6.4)	ND(6.4)	1.4 J	ND(32)	ND(28)	ND(12)	ND(6.4)	ND(6.4)
Benzyl chloride	µg/m³	ND(21)	ND(21)	ND(21)	ND(100)	ND(89)	ND(40)	ND(21)	ND(21)
Bromodichloromethane	µg/m³	ND(10)	ND(10)	ND(10)	ND(50)	ND(43)	ND(20)	ND(10)	ND(10)
Bromoform	µg/m³	ND(21)	ND(21)	ND(21)	ND(100)	ND(89)	ND(40)	ND(21)	ND(21)
Bromomethane (Methyl bromide)	µg/m³	ND(16)	ND(16)	ND(16)	ND(78)	ND(67)	ND(30)	ND(16)	ND(16)
Carbon disulfide	µg/m³	5.8 J	4.5 J	ND(12)	ND(62)	ND(54)	ND(24)	ND(12)	ND(12)
Carbon tetrachloride	µg/m³	ND(25)	ND(25)	ND(25)	ND(130)	ND(110)	ND(49)	ND(25)	ND(25)
Chlorobenzene	µg/m³	ND(6.9)	ND(6.9)	ND(6.9)	ND(35)	ND(30)	ND(13)	ND(6.9)	ND(6.9)
Chloroethane	µg/m³	ND(11)	ND(11)	ND(11)	ND(53)	ND(46)	ND(21)	ND(11)	ND(11)
Chloroform (Trichloromethane)	µg/m³	9.7	ND(7.3)	ND(7.3)	ND(37)	ND(32)	ND(14)	ND(7.3)	ND(7.3)
Chloromethane (Methyl chloride)	µg/m³	ND(8.3)	2.7 J	2.2 J	ND(41)	ND(36)	ND(16)	ND(8.3)	ND(8.3)
cis-1,2-Dichloroethene	µg/m³	ND(7.9)	ND(7.9)	ND(7.9)	ND(40)	ND(34)	ND(15)	ND(7.9)	2.6 J
cis-1,3-Dichloropropene	µg/m³	ND(9.1)	ND(9.1)	ND(9.1)	ND(45)	ND(39)	ND(18)	ND(9.1)	ND(9.1)
Dibromochloromethane	µg/m³	ND(17)	ND(17)	ND(17)	ND(85)	ND(74)	ND(33)	ND(17)	ND(17)
Dichlorodifluoromethane (CFC-12)	µg/m³	3.7 J	ND(9.9)	3.7 J	ND(49)	ND(43)	ND(19)	ND(9.9)	10
Ethylbenzene	µg/m³	ND(8.7)	ND(8.7)	ND(8.7)	ND(43)	ND(38)	ND(17)	ND(8.7)	4.1 J
Hexachlorobutadiene	µg/m³	ND(110)	ND(110)	ND(110)	ND(530)	ND(460)	ND(210)	ND(110)	ND(110)
m&p-Xylenes	µg/m³	ND(17)	3.1 J	4.6 J	ND(87)U	ND(75)	ND(34)	ND(17)	4.2 J
Methylene chloride	µg/m³	ND(6.9)	2.9 J	3.9 J	ND(35)	ND(30)	ND(14)	ND(6.9)	ND(6.9)
o-Xylene	µg/m³	ND(8.7)	ND(8.7)	ND(8.7)	ND(43)U	ND(38)	ND(17)	ND(8.7)	ND(8.7)
Tetrachloroethene	µg/m³	37	ND(14)	ND(14)	64 J	69	91	3.4 J	5.1 J
Toluene	µg/m³	ND(7.5)	130 J	310 J	ND(38)	ND(33)	ND(15)	ND(7.5)	8.5
trans-1,2-Dichloroethene	µg/m³	ND(7.9)	ND(7.9)	ND(7.9)	ND(40)	ND(34)	ND(15)	ND(7.9)	ND(7.9)
trans-1,3-Dichloropropene	µg/m³	ND(9.1)	ND(9.1)	ND(9.1)	ND(45)	ND(39)	ND(18)	ND(9.1)	ND(9.1)
Trichloroethene	µg/m³	23	ND(11)	ND(11)	ND(11)	19 J	26 J	ND(11)	29

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP1-12	GP3-12	GP3-12	GP3-12	GP3-12	GP3-12	GP4-12	GP5-12	GP5-12
Sample Identification:	GE-48041-091417-DC-002	GE-48041-050614-CB-004	GE-48041-050614-CB-005	GE-48041-080615-CB-002	GE-48041-081216-DC-002	GE-48041-091417-DC-003	GE-48041-091417-DC-004	GE-48041-050614-CB-003	GE-48041-080615-CB-003
Sample Date:	9/14/2017	5/6/2014	5/6/2014	8/6/2015	8/12/2016	9/14/2017	9/14/2017	5/6/2014	8/6/2015
Sample Type:	Duplicate		Duplicate						
Units									
Trichlorofluoromethane (CFC-11)	µg/m³	17	ND(11)	ND(11)	ND(56)	ND(49)	12 J	10 J	ND(11)
Trifluorotrichloroethane (CFC-113)	µg/m³	ND(15)	ND(15)	ND(15)	ND(77)	ND(66)	ND(30)	ND(15)	ND(15)
Vinyl acetate	µg/m³	ND(14)	ND(14)	ND(14)	ND(70)	ND(61)	ND(27)	ND(14)	ND(14)
Vinyl chloride	µg/m³	ND(5.1)	ND(5.1)	ND(5.1)	ND(26)	ND(22)	ND(10)	ND(5.1)	ND(5.1)

Footnotes:

ND() - Not detected at the associated reporting limit.

U - Not detected at the associated reporting limit.

J - Estimated concentration.

(1) MDEQ Media-Specific Volatilization to Indoor Air Interi

RIASL - Recommended Interim Action Screening

RIASL₁₂ - Recommended Interim Action ScreeninTSRIASL₁₂ - Time Sensitive Recommended Inter

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP5-12	GP5-12	GP7-12	GP7-12	GP7-12	GP7-12	GP7-12	MW6-10
Sample Identification:	GE-48041-081216-DC-003	GE-48041-081216-DC-004	GE-48041-050514-CB-002	GE-48041-080615-CB-005	GE-48041-080615-CB-006	GE-48041-081216-DC-005	GE-48041-091417-DC-005	GE-48041-091417-DC-006
Sample Date:	8/12/2016	8/12/2016	5/5/2014	8/6/2015	8/6/2015	8/12/2016	9/14/2017	9/14/2017
Sample Type:	Duplicate							
Units								
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/m³	ND(8.2)						
1,1,2,2-Tetrachloroethane	µg/m³	ND(14)						
1,1,2-Trichloroethane	µg/m³	ND(11)						
1,1-Dichloroethane	µg/m³	3.0 J	3.1 J	ND(6.1)	4.3 J	4.3 J	3.0 J	2.4 J
1,1-Dichloroethene	µg/m³	ND(16)						
1,2,4-Trichlorobenzene	µg/m³	ND(74)						
1,2,4-Trimethylbenzene	µg/m³	ND(20)	ND(20)	ND(20)	5.6 J	4.9 J	ND(20)	ND(20)
1,2-Dibromoethane (Ethylene dibromide)	µg/m³	ND(31)						
1,2-Dichlorobenzene	µg/m³	ND(12)						
1,2-Dichloroethane	µg/m³	ND(16)						
1,2-Dichloropropane	µg/m³	ND(9.2)						
1,2-Dichlortetrafluoroethane (CFC 114)	µg/m³	ND(14)						
1,3,5-Trimethylbenzene	µg/m³	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	14
1,3-Dichlorobenzene	µg/m³	ND(12)	ND(12)	ND(12)	3.6 J	3.5 J	ND(12)	ND(12)
1,4-Dichlorobenzene	µg/m³	ND(12)	ND(12)	ND(12)	5.4 J	6.0 J	ND(12)	7.2 J
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m³	ND(12)	ND(12)	ND(12)	4.0 J	3.8 J	ND(12)	14
2-Hexanone	µg/m³	ND(8.2)						
4-Ethyl toluene	µg/m³	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	ND(9.8)	19
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MI)	µg/m³	ND(8.2)						
Acetone	µg/m³	8.5 J	11 J	30	190	190	18 J	5.6 J
Benzene	µg/m³	ND(6.4)	ND(6.4)	ND(6.4)	1.6 J	1.6 J	ND(6.4)	7.3
Benzyl chloride	µg/m³	ND(21)						
Bromodichloromethane	µg/m³	ND(10)						
Bromoform	µg/m³	ND(21)						
Bromomethane (Methyl bromide)	µg/m³	ND(16)						
Carbon disulfide	µg/m³	ND(12)	ND(12)	1.3 J	ND(12)	ND(12)	ND(12)	ND(12)
Carbon tetrachloride	µg/m³	ND(25)						
Chlorobenzene	µg/m³	ND(6.9)						
Chloroethane	µg/m³	ND(11)						
Chloroform (Trichloromethane)	µg/m³	ND(7.3)						
Chloromethane (Methyl chloride)	µg/m³	ND(8.3)	ND(8.3)	ND(8.3)	ND(8.3)	2.4 J	ND(8.3)	2.4 J
cis-1,2-Dichloroethene	µg/m³	4.8 J	5.0 J	ND(7.9)	ND(7.9)	ND(7.9)	ND(7.9)	ND(7.9)
cis-1,3-Dichloropropene	µg/m³	ND(9.1)						
Dibromochloromethane	µg/m³	ND(17)						
Dichlorodifluoromethane (CFC-12)	µg/m³	11	11	3.9 J	ND(9.9)	ND(9.9)	ND(9.9)	3.8 J
Ethylbenzene	µg/m³	ND(8.7)	ND(8.7)	ND(8.7)	2.4 J	ND(8.7)	ND(8.7)	32
Hexachlorobutadiene	µg/m³	ND(110)						
m&p-Xylenes	µg/m³	2.8 J	2.8 J	2.9 J	10 J	9.6 J	6.1 J	240
Methylene chloride	µg/m³	ND(6.9)	ND(6.9)	1.9 J	ND(6.9)	ND(6.9)	ND(6.9)	2.0 J
o-Xylene	µg/m³	ND(8.7)	ND(8.7)	ND(8.7)	4.0 J	3.9 J	2.4 J	66
Tetrachloroethene	µg/m³	17	18	ND(14)	4.7 J	4.8 J	5.9 J	11 J
Toluene	µg/m³	ND(7.5)	ND(7.5)	9.2	3.6 J	3.4 J	3.2 J	ND(7.5)
trans-1,2-Dichloroethene	µg/m³	ND(7.9)						
trans-1,3-Dichloropropene	µg/m³	ND(9.1)						
Trichloroethene	µg/m³	77 ^{ac}		80 ^{ac}		ND(11)	3.2 J	5.7 J
							3.8 J	4.2 J

Table 6

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP5-12	GP5-12	GP7-12	GP7-12	GP7-12	GP7-12	GP7-12	MW6-10
Sample Identification:	GE-48041-081216-DC-003	GE-48041-081216-DC-004	GE-48041-050514-CB-002	GE-48041-080615-CB-005	GE-48041-080615-CB-006	GE-48041-081216-DC-005	GE-48041-091417-DC-005	GE-48041-091417-DC-006
Sample Date:	8/12/2016	8/12/2016	5/5/2014	8/6/2015	8/6/2015	8/12/2016	9/14/2017	9/14/2017
Sample Type:		Duplicate			Duplicate			
Units								
Trichlorofluoromethane (CFC-11)	µg/m³	ND(11)						
Trifluorotrichloroethane (CFC-113)	µg/m³	ND(15)						
Vinyl acetate	µg/m³	ND(14)						
Vinyl chloride	µg/m³	ND(5.1)						

Footnotes:

ND() - Not detected at the associated reporting limit.

U - Not detected at the associated reporting limit.

J - Estimated concentration.

(1) MDEQ Media-Specific Volatilization to Indoor Air Interi

RIASL - Recommended Interim Action Screening

RIASL₁₂ - Recommended Interim Action ScreeninTSRIASL₁₂ - Time Sensitive Recommended Inter

Table 7

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	EX-11	EX-24	GP1-12	GP1-12	GP1-12	GP1-12	GP1-12	GP1-12	GP3-12	GP3-12	GP3-12	GP3-12
Sample Identification:	GE-48041-081216-DC-006	GE-48041-080615-CB-004	GE-48041-050514-CB-001	GE-48041-080615-CB-001	GE-48041-081216-DC-001	GE-48041-091417-DC-001	GE-48041-091417-DC-002	GE-48041-050614-CB-004	GE-48041-050614-CB-005	GE-48041-050614-CB-005	GE-48041-080615-CB-002	GE-48041-081216-DC-002
Sample Date:	8/12/2016	8/6/2015	5/5/2014	8/6/2015	8/12/2016	9/14/2017	9/14/2017	5/6/2014	5/6/2014	5/6/2014	8/6/2015	8/12/2016
Sample Type:						Duplicate				Duplicate		
Units												
Volatile Organic Compounds (VOCs)												
1,1,1-Trichloroethane	ppbv	ND(21)	ND(7.3)	ND(1.5)	ND(7.3)	1.0 J	0.81 J	0.73 J	ND(1.5)	ND(1.5)	ND(7.5)	ND(6.5)
1,1,2,2-Tetrachloroethane	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,1,2-Trichloroethane	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,1-Dichloroethane	ppbv	8.3 J	100 J	ND(1.5)	2.1 J	0.80 J	ND(1.5)	ND(1.5)	ND(1.5)	ND(1.5)	ND(7.5)	ND(6.5)
1,1-Dichloroethene	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
1,2,4-Trichlorobenzene	ppbv	ND(140)	ND(49)	ND(10)	ND(48)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)	ND(43)
1,2,4-Trimethylbenzene	ppbv	ND(55)	8.3 J	ND(4.0)	4.1 J	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	5.8 J	ND(17)
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
1,2-Dichlorobenzene	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,2-Dichloroethane	ppbv	ND(55)	ND(20)	ND(4.0)	9.8 J	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
1,2-Dichloropropane	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,2-Dichlortetrafluoroethane (CFC 114)	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,3,5-Trimethylbenzene	ppbv	ND(27)	4.4 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,3-Dichlorobenzene	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
1,4-Dichlorobenzene	ppbv	ND(27)	5.8 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	2.4	4.8 J
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	2100	300 J	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	7.7 J	23
2-Hexanone	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
4-Ethyl toluene	ppbv	ND(27)	14 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	36	8.6
Acetone	ppbv	580	410 J	24	38 J	7.1 J	2.9 J	3.6 J	79	67	430	440
Benzene	ppbv	ND(27)	230 J	ND(2.0)	39	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	0.45 J	ND(8.6)
Benzyl chloride	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
Bromodichloromethane	ppbv	ND(21)	ND(7.3)	ND(1.5)	ND(7.3)	ND(1.5)	ND(1.5)	ND(1.5)	ND(1.5)	ND(1.5)	ND(7.5)	ND(6.5)
Bromoform	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
Bromomethane (Methyl bromide)	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
Carbon disulfide	ppbv	13 J	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	1.9 J	1.4 J	ND(4.0)	ND(17)
Carbon tetrachloride	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
Chlorobenzene	ppbv	ND(21)	ND(7.3)	ND(1.5)	ND(7.3)	ND(1.5)	ND(1.5)	ND(1.5)	ND(1.5)	ND(1.5)	ND(7.5)	ND(6.5)
Chloroethane	ppbv	ND(55)	100 J	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20)	ND(17)
Chloroform (Trichloromethane)	ppbv	ND(21)	ND(7.3)	ND(1.5)	ND(7.3)	0.94 J	1.9	2.0	ND(1.5)	ND(1.5)	ND(7.5)	ND(6.5)
Chloromethane (Methyl chloride)	ppbv	ND(55)	ND(20)	ND(4.0)	ND(19)	ND(4.0)	ND(4.0)	ND(4.0)	1.3 J	1.1 J	ND(20)	ND(17)
cis-1,2-Dichloroethene	ppbv	ND(27)	7.9 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
cis-1,3-Dichloropropene	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
Dibromochloromethane	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
Dichlorodifluoromethane (CFC-12)	ppbv	ND(27)	ND(9.8)	1.2 J	ND(9.7)	ND(2.0)	0.77 J	0.74 J	ND(2.0)	0.75 J	ND(10)	ND(8.6)
Ethylbenzene	ppbv	ND(27)	39 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
Hexachlorobutadiene	ppbv	ND(140)	ND(49)	ND(10)	ND(48)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)	ND(43)
m&p-Xylenes	ppbv	ND(55)	51 J	ND(4.0)	ND(19)U	1.2 J	ND(4.0)	ND(4.0)	0.72 J	1.1 J	ND(20)U	ND(17)
Methylene chloride	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	0.84 J	1.1 J	ND(10)	ND(8.6)
o-Xylene	ppbv	ND(27)	37 J	ND(2.0)	ND(9.7)U	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)U	ND(8.6)
Tetrachloroethene	ppbv	ND(27)	ND(9.8)	0.72 J	4.5 J	4.6	5.5	5.4	ND(2.0)	ND(2.0)	9.5 J	10
Toluene	ppbv	ND(27)	ND(9.8)	0.53 J	2.5 J	0.76 J	ND(2.0)	ND(2.0)	35 J	82 J	ND(10)	ND(8.6)
trans-1,2-Dichloroethene	ppbv	ND(27)	2.9 J	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
trans-1,3-Dichloropropene	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(8.6)
Trichloroethene	ppbv	ND(27)	ND(9.8)	0.53 J	3.6 J	4.2	4.0	4.3	ND(2.0)	ND(2.0)	3.6 J	4.8 J
Trichlorofluoromethane (CFC-11)	ppbv	ND(27)	ND(9.8)	ND(2.0)	ND(9.7)	2.9	3.0	3.0</td				

Table 7

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP3-12	GP4-12	GP5-12	GP5-12	GP5-12	GP5-12	GP7-12	GP7-12	GP7-12	GP7-12	GP7-12
Sample Identification:	GE-48041-091417-DC-003	GE-48041-091417-DC-004	GE-48041-050614-CB-003	GE-48041-080615-CB-003	GE-48041-081216-DC-003	GE-48041-081216-DC-004	GE-48041-050514-CB-002	GE-48041-080615-CB-005	GE-48041-080615-CB-006	GE-48041-080615-CB-006	GE-48041-081216-DC-005
Sample Date:	9/14/2017	9/14/2017	5/6/2014	8/6/2015	8/12/2016	8/12/2016	5/5/2014	8/6/2015	8/6/2015	8/6/2015	8/12/2016
Sample Type:					Duplicate						
Units											
Volatile Organic Compounds (VOCs)											
1,1,1-Trichloroethane	ppbv	ND(2.9)	ND(1.5)								
1,1,2,2-Tetrachloroethane	ppbv	ND(3.9)	ND(2.0)								
1,1,2-Trichloroethane	ppbv	ND(3.9)	ND(2.0)								
1,1-Dichloroethane	ppbv	ND(2.9)	ND(1.5)	ND(1.5)	0.49 J	0.74 J	0.76 J	ND(1.5)	1.1 J	1.1 J	0.74 J
1,1-Dichloroethene	ppbv	ND(7.8)	ND(4.0)								
1,2,4-Trichlorobenzene	ppbv	ND(20)	ND(10)								
1,2,4-Trimethylbenzene	ppbv	ND(7.8)	ND(4.0)	ND(4.0)	4.8	ND(4.0)	ND(4.0)	ND(4.0)	1.1 J	1.0 J	ND(4.0)
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND(7.8)	ND(4.0)								
1,2-Dichlorobenzene	ppbv	ND(3.9)	ND(2.0)								
1,2-Dichloroethane	ppbv	ND(7.8)	ND(4.0)								
1,2-Dichloropropane	ppbv	ND(3.9)	ND(2.0)								
1,2-Dichlorotetrafluoroethane (CFC 114)	ppbv	ND(3.9)	ND(2.0)								
1,3,5-Trimethylbenzene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	ND(2.0)U	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)
1,3-Dichlorobenzene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	0.60 J	0.59 J	ND(2.0)
1,4-Dichlorobenzene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	4.6	ND(2.0)	ND(2.0)	ND(2.0)	0.89 J	1.0 J	ND(2.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	23	ND(4.0)	3.5 J	1.1 J	ND(4.0)	ND(4.0)	ND(4.0)	1.4 J	1.3 J	ND(4.0)
2-Hexanone	ppbv	ND(3.9)	ND(2.0)								
4-Ethyl toluene	ppbv	ND(3.9)	ND(2.0)								
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	1.4 J	ND(2.0)								
Acetone	ppbv	320	8.9 J	63	83	3.6 J	4.5 J	13	79	80	7.8 J
Benzene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	0.50 J	0.49 J	ND(2.0)
Benzyl chloride	ppbv	ND(7.8)	ND(4.0)								
Bromodichloromethane	ppbv	ND(2.9)	ND(1.5)								
Bromoform	ppbv	ND(3.9)	ND(2.0)								
Bromomethane (Methyl bromide)	ppbv	ND(7.8)	ND(4.0)								
Carbon disulfide	ppbv	ND(7.8)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	0.42 J	ND(4.0)	ND(4.0)
Carbon tetrachloride	ppbv	ND(7.8)	ND(4.0)								
Chlorobenzene	ppbv	ND(2.9)	ND(1.5)								
Chloroethane	ppbv	ND(7.8)	ND(4.0)								
Chloroform (Trichloromethane)	ppbv	ND(2.9)	ND(1.5)								
Chloromethane (Methyl chloride)	ppbv	ND(7.8)	ND(4.0)								
cis-1,2-Dichloroethene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	0.66 J	1.2 J	1.3 J	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)
cis-1,3-Dichloropropene	ppbv	ND(3.9)	ND(2.0)								
Dibromochloromethane	ppbv	ND(3.9)	ND(2.0)								
Dichlorodifluoromethane (CFC-12)	ppbv	ND(3.9)	ND(2.0)	2.0	1.6 J	2.2	2.2	0.79 J	ND(2.0)	ND(2.0)	ND(2.0)
Ethylbenzene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	0.94 J	ND(2.0)	ND(2.0)	ND(2.0)	0.55 J	ND(2.0)	ND(2.0)
Hexachlorobutadiene	ppbv	ND(20)	ND(10)								
m&p-Xylenes	ppbv	ND(7.8)	ND(4.0)	0.97 J	5.4	0.63 J	0.66 J	0.66 J	2.3 J	2.2 J	1.4 J
Methylene chloride	ppbv	ND(3.9)	ND(2.0)								
o-Xylene	ppbv	ND(3.9)	ND(2.0)	ND(2.0)	ND(2.0)U	ND(2.0)	ND(2.0)	ND(2.0)	0.92 J	0.90 J	0.54 J
Tetrachloroethene	ppbv	13	0.50 J	0.75 J	1.4 J	2.5	2.6	ND(2.0)	0.70 J	0.71 J	0.87 J
Toluene	ppbv	ND(3.9)	ND(2.0)	2.3	0.78 J	ND(2.0)	ND(2.0)	2.4	0.96 J	0.91 J	0.86 J
trans-1,2-Dichloroethene	ppbv	ND(3.9)	ND(2.0)								
trans-1,3-Dichloropropene	ppbv	ND(3.9)	ND(2.0)								
Trichloroethene	ppbv	4.9	ND(2.0)	5.4	10	14	15	ND(2.0)	0.60 J	0.59 J	0.71 J
Trichlorofluoromethane (CFC-11)	ppbv	2.2 J	1.8 J	ND(2.0)							
Trifluorotrifluoroethane (CFC-113)	ppbv	ND(3.9)	ND(2.0)								
Vinyl acetate	ppbv	ND(7.8)	ND(4.0)								
Vinyl chloride	ppbv	ND(3.9)	ND(2.0)								

Table 7

Soil Gas Analytical Results
Quarterly Progress Report #18 (July, August, and September 2017)
Former Dearborn Refining Site
Dearborn, Michigan

Sample Location:	GP7-12	MW6-10
Sample Identification:	GE-48041-091417-DC-005	GE-48041-091417-DC-006
Sample Date:	9/14/2017	9/14/2017
Sample Type:	Units	
Volatile Organic Compounds (VOCs)		
1,1,1-Trichloroethane	ppbv	ND(1.5)
1,1,2,2-Tetrachloroethane	ppbv	ND(2.0)
1,1,2-Trichloroethane	ppbv	ND(2.0)
1,1-Dichloroethane	ppbv	0.59 J
1,1-Dichloroethene	ppbv	ND(4.0)
1,2,4-Trichlorobenzene	ppbv	ND(10)
1,2,4-Trimethylbenzene	ppbv	ND(4.0)
1,2-Dibromoethane (Ethylene dibromide)	ppbv	ND(4.0)
1,2-Dichlorobenzene	ppbv	ND(2.0)
1,2-Dichloroethane	ppbv	ND(4.0)
1,2-Dichloropropane	ppbv	ND(2.0)
1,2-Dichlorotetrafluoroethane (CFC 114)	ppbv	ND(2.0)
1,3,5-Trimethylbenzene	ppbv	ND(2.0)
1,3-Dichlorobenzene	ppbv	ND(2.0)
1,4-Dichlorobenzene	ppbv	ND(2.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	ND(4.0)
2-Hexanone	ppbv	ND(2.0)
4-Ethyl toluene	ppbv	ND(2.0)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	ND(2.0)
Acetone	ppbv	2.4 J
Benzene	ppbv	ND(2.0)
Benzyl chloride	ppbv	ND(4.0)
Bromodichloromethane	ppbv	ND(1.5)
Bromoform	ppbv	ND(2.0)
Bromomethane (Methyl bromide)	ppbv	ND(4.0)
Carbon disulfide	ppbv	ND(4.0)
Carbon tetrachloride	ppbv	ND(4.0)
Chlorobenzene	ppbv	ND(1.5)
Chloroethane	ppbv	ND(4.0)
Chloroform (Trichloromethane)	ppbv	ND(1.5)
Chloromethane (Methyl chloride)	ppbv	ND(4.0)
cis-1,2-Dichloroethene	ppbv	ND(2.0)
cis-1,3-Dichloropropene	ppbv	ND(2.0)
Dibromochloromethane	ppbv	ND(2.0)
Dichlorodifluoromethane (CFC-12)	ppbv	ND(2.0)
Ethylbenzene	ppbv	ND(2.0)
Hexachlorobutadiene	ppbv	ND(10)
m&p-Xylenes	ppbv	ND(4.0)
Methylene chloride	ppbv	0.58 J
o-Xylene	ppbv	ND(2.0)
Tetrachloroethene	ppbv	1.6 J
Toluene	ppbv	ND(2.0)
trans-1,2-Dichloroethene	ppbv	ND(2.0)
trans-1,3-Dichloropropene	ppbv	ND(2.0)
Trichloroethene	ppbv	1.1 J
Trichlorofluoromethane (CFC-11)	ppbv	ND(2.0)
Trifluorotrichloroethane (CFC-113)	ppbv	ND(2.0)
Vinyl acetate	ppbv	ND(4.0)
Vinyl chloride	ppbv	ND(2.0)

Footnotes:

ND() - Not detected at the associated reporting limit.

U - Not detected at the associated reporting limit.

J - Estimated concentration.